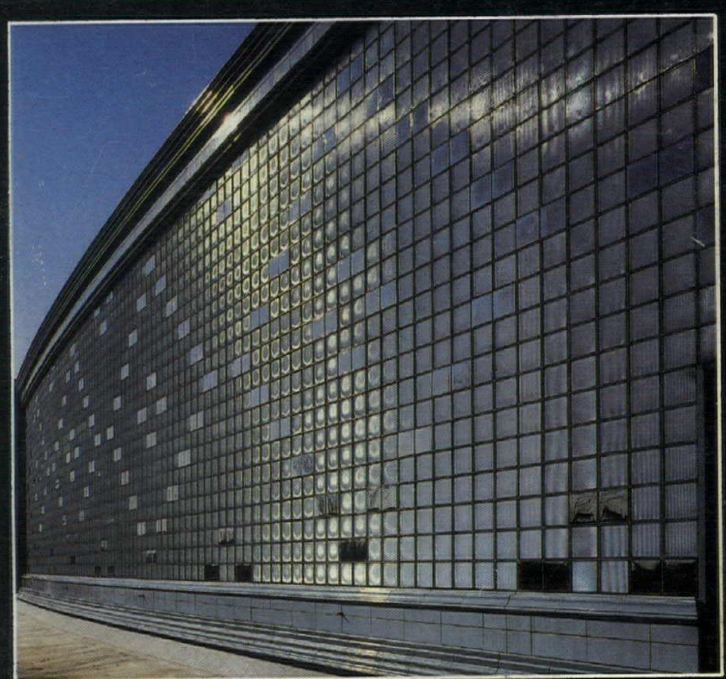
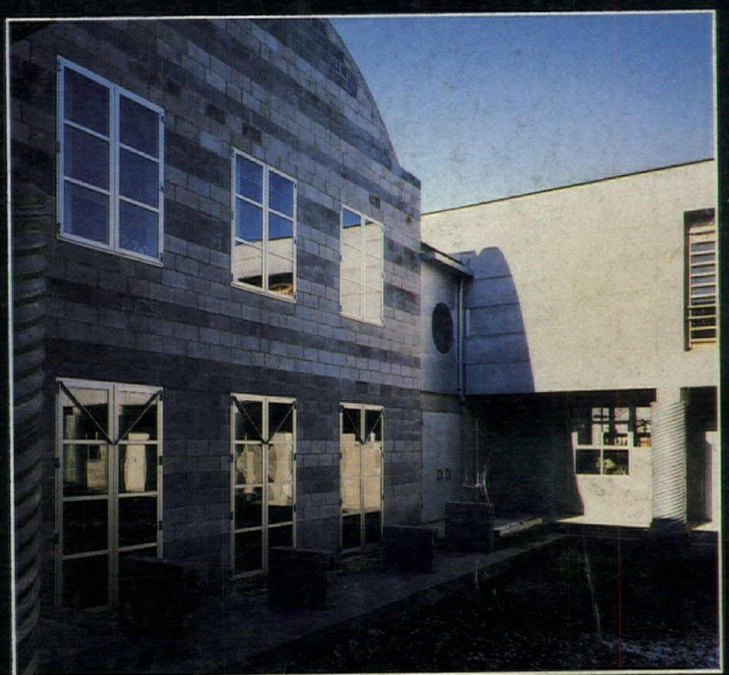
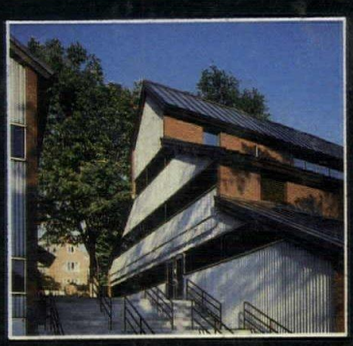
Progressive Architecture

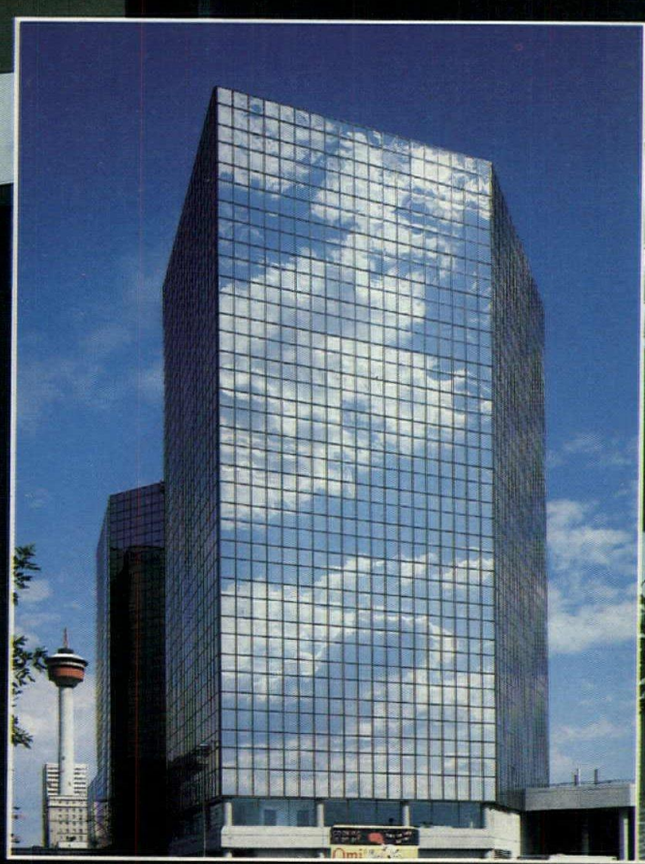
February 1981







C-60 Luminaire is one reason why Gulf Canada



Architect: Ken Cooper, Gulf Canada Square Corp. / General Contractor: PCL Construction, Ltd., Calgary / Ceiling Contractor: F. Drexel Company, Ltd., Calgary

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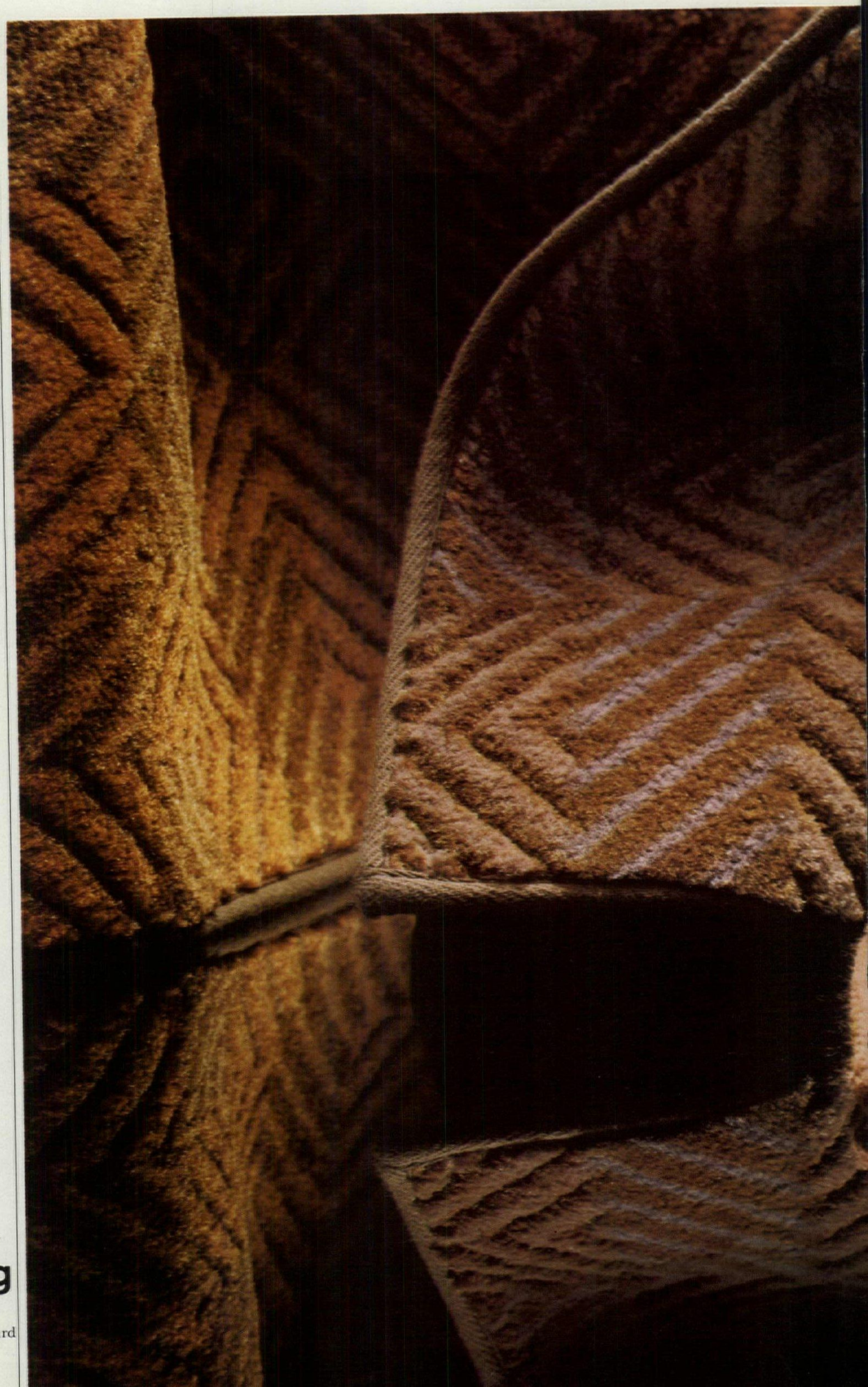

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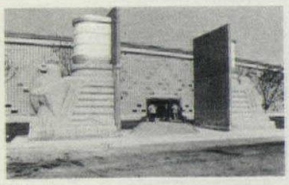

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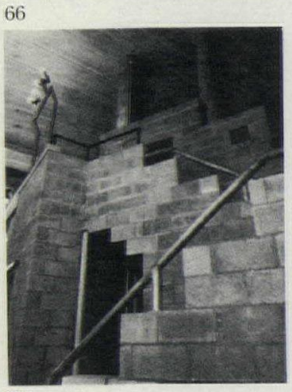

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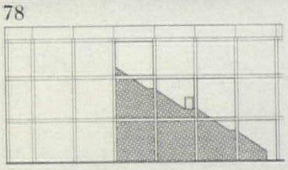

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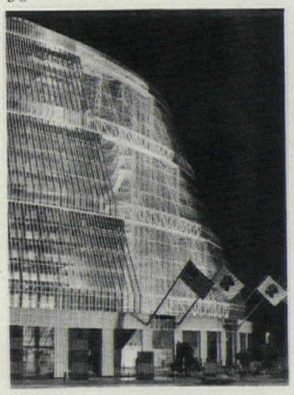

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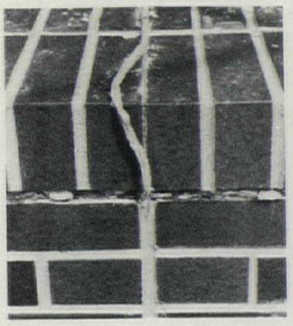

104

Cover: *Fragments of four buildings by two firms: HHPA's Best Products headquarters (p. 66) and the building at St. Paul's School (p. 74); Studio Works' South Side Settlement (p. 78) and Gagosian Studio (p. 86).*

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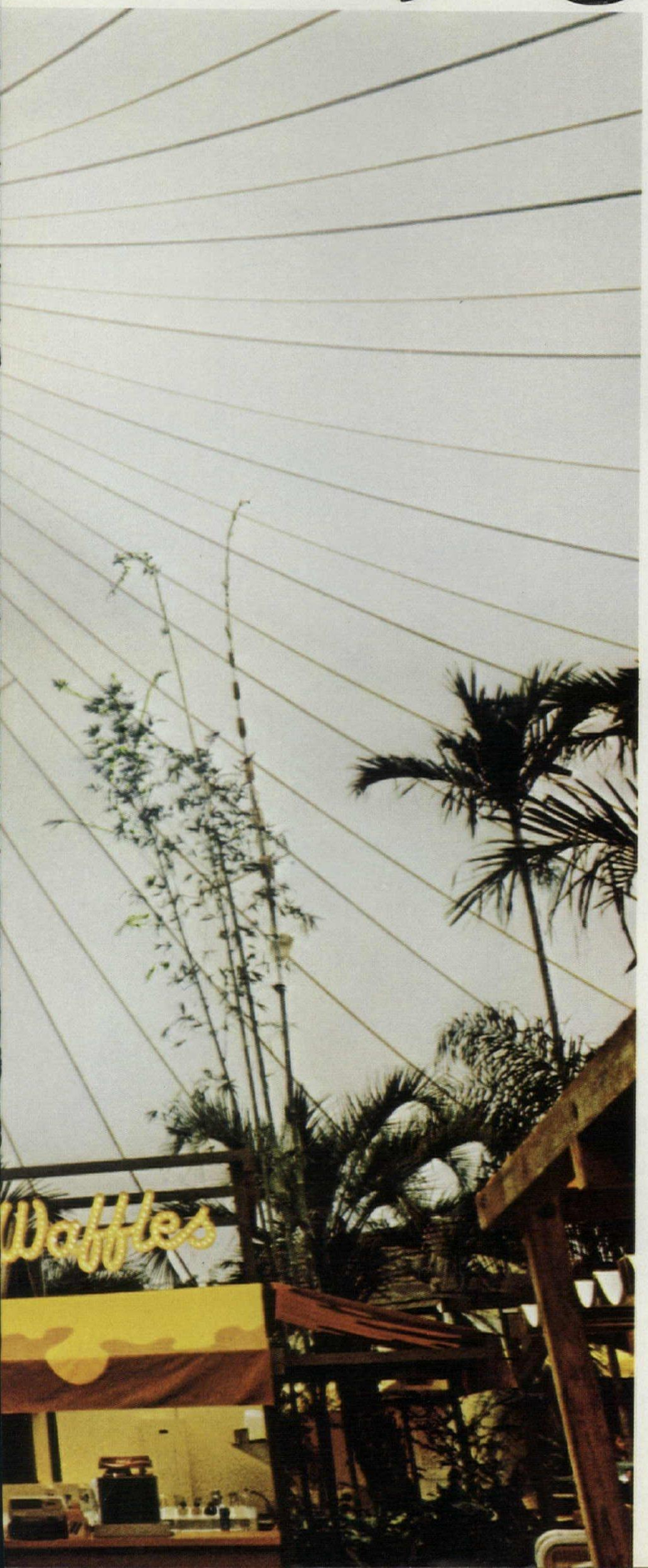

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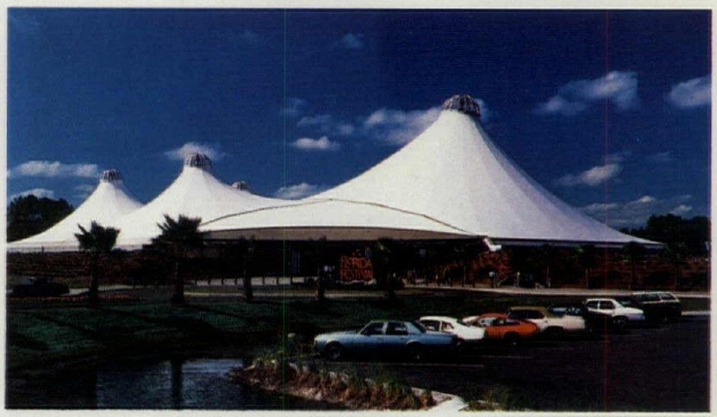

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Prismacolor and the art of building

At a time when architectural drawings hang for sale on gallery walls, what part should the craft of building be playing in design?

One of the fundamentals of Modern architecture is that design should honestly express the building techniques of our era. Another, less explicit principle is that drawings are not to be trusted: the one-point perspectives and pastel washes of the Beaux-Arts period have been supplanted by the model, which was thought to be more suitable to our kinetic age and its plastic building forms. Modernist drawings tend to be either sketchy and conceptual (Corbu, Eero Saarinen, Kahn, Giurgola) or technical (Mies van der Rohe)—but in any case color is to be avoided.

Revival of polychromed drawing was one of the early signs of rebellion among the Post-Modernists. Robert Venturi began early to spike drawings of his firm with Pop references, Charles Moore alluded more to commercial renderings, and Graves, to history. As the movement gained momentum, galleries began to exhibit architectural drawings, many for seemingly hypothetical or polemical projects.

The resistance against Post-Modernism was quick to characterize its output as "two-dimensional" and "prismacolor," implying very concisely that such eyewash was not really buildable, or if built would be unresponsive to the realities of life.

Whatever Post-Modernist drawings say about their authors' commitment to meeting real-world needs, they do suggest an indifference to materials and techniques of construction. Buildings appear to be composed of surfaces and ornament all made of the same nonspecific substance. This impression may be borne out in built work, for instance in Moore and partners' Kresge College at Santa Cruz (P/A, May 1974), which is entirely painted gypboard and stucco—no joints, no moldings. Graves's work to date is composed of geometries, patterns, and colors, with no attention drawn to specific materials. Venturi's work, on the other hand, typically draws on the distinctive qualities of brick, shingles—even interior plaster in bold modeling; his firm's house at Vail, Co (P/A, Oct. 1977) is an exercise in tradition-based wood craftsmanship.

Charles Jeenks, in his most recent classified catalog of current design (*Late Modern Architecture and Other Essays,* Rizzoli, 1980) distinguishes "Late-Modernism" from "Post-Modernism," partly on the basis of their attitude toward construction technology. Late-Modernism "takes technological imagery to an extreme that the Modern Movement never reached." There is likely to be a bravura display of "Machine Aesthetic," as in Norman Foster's Sainsbury Centre (P/A, Feb. 1979), but there may instead be articulation of low-tech materials such as the block walls and concrete beams in the work of Herman Hertzberger (P/A, July 1980). Post-Modernism, says Jencks, opposes the Machine Aesthetic with a "variable mixed aesthetic depending on context"—or, as noted above, depending on the architect's viewpoint.

Throughout history, the high architecture of established cultures has generally played down the specifics of fabrication. It was only in rustic places and at the fringes of civilization—Medieval Russia and Scandinavia, for instance—or in periods of cultural transition, like the Romanesque, that building technique was visibly celebrated. In the 19th-Century west, the pattern was broken: rapid technological change and romantic notions of a primitive past—opposing forces—both led to reemphasis of craft over form. (This had happened before, notably in the 16th-Century Japanese revival of the primitive teahouse style.) The formalists have fought back repeatedly over the past century-and-a-half—carrying the day at various times and places—and they are making headway again today.

The work featured in this issue covers the gamut of today's attitudes—albeit unevenly. Hardy Holzman Pfeiffer Associates (pp. 66–77) have clearly been Late Modernist in their fascination with industrial components, except that they use them with irony, and in their two works in this issue, they add historical and contextual allusions that lean toward Post-Modernism. The Studio Works buildings (pp. 78–89) are clearly Post-Modern in concept, yet the South Side Settlement shows a concentration on construction specifics that recalls the work of Hertzberger. Among the smaller "Intervention" projects (pp. 90–95) only Steven Holl's stands for formal composition without reference to technics; Taft's contrasts an abstract, neutral, geometrical plane with another that is unmistakably made up of tiles.

There is no universally correct balance in articulating craft vs form, but there may be a right way for the situation at hand. There is something primitive and intimate about the emphasis of materials and joinery; there is something detached and universal about subordinating specifics to overall formal concept. This was as true in Uxmal or Isfahan as it was in Rome or London, and still is. There may also be the situations where the two approaches can be juxtaposed, but it's like using Zip-a-tone with a watercolor wash: only the most skillful can carry it off.

John Morris Dixon

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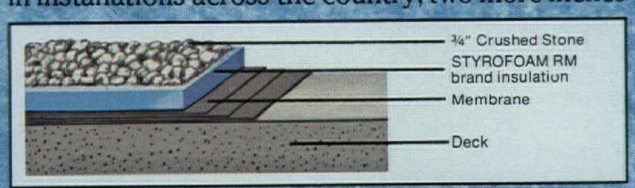

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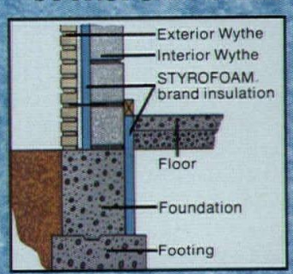

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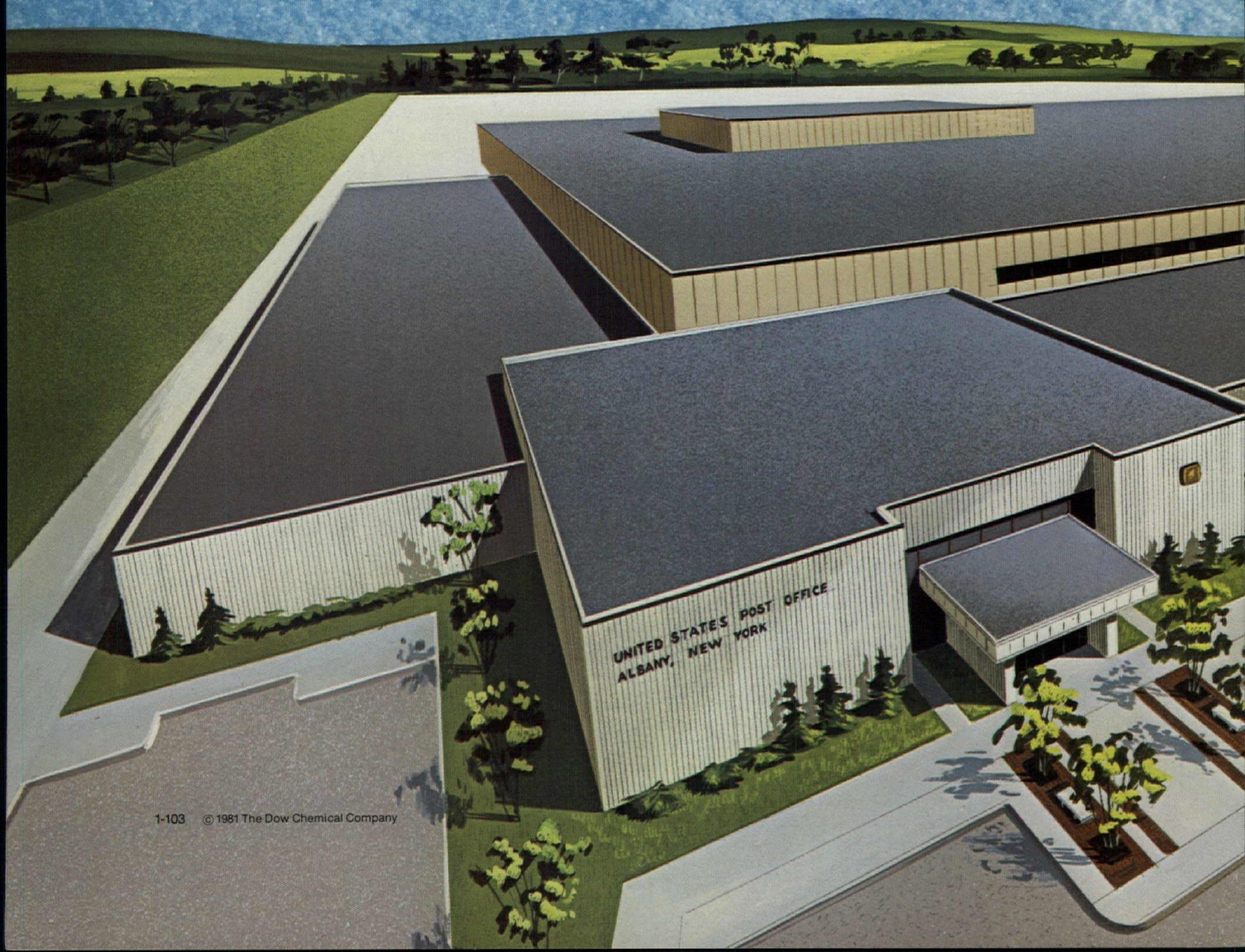

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Views

Rating the Grand Hyatt

The gist of the introduction to the article "Rating Reuse" (Nov. 1980) by David Morton makes the case that criticism of the whole preservation movement has been silent too long and it is time for P/A to take a critical look at some recent projects. He then promptly launches into an attack on the new Grand Hyatt Hotel and the fact that the old Commodore ballroom ". . . the best part of it . . ." has been irrevocably lost! Mr. Morton, using hotel public relations statements as fact, that the ballroom ". . . will be restored to retain the traditional ballroom flavor—in all its decorative detail . . ." took this to mean a perfect restoration as if it were Grand Central Station itself. The Commodore ballroom had some fine details but was never the Waldorf or Plaza in its elegance. (See photos below.) The old space was inefficient, unable to be subdivided for the many convention and meeting needs of any modern major hotel, had balconies that were never used and a fire hazard, and had major problems of service from kitchens. The restoration of the detail did, in fact, occur, including as well new chandeliers of crystal to achieve lighting levels never before attained, carpet for acoustic purposes and rolling partitions for subdivision capability. Our office fought hard to retain much of the old while under pressure to increase the functionality of this space. There are those now who feel that the "new ballroom," with many of its old features intact and its high ceiling combined with the restored pre-function foyer, make it one of the most "usable" of its kind in the city (Ada Louise Huxtable, *New York Times,* Oct. 19, 1979).

It seems to me, however, Mr. Morton really misses the entire point by even entering the Grand Hyatt in his "Rating Reuse." It was always the intention of Hyatt/Trump as developers to provide in final form a "new face" on 42nd Street that in turn would help ignite a rebirth of the grimiest and seediest street in America. To many New Yorkers, holed up for so long in the grayness of their environment, the shine and glitter that sparkle from the lobby out to the street are exciting and more reminiscent of what is best about 42nd Street and the New York of *old.* I feel that not just detail, but character and relationship to the street are needed for buildings to work in such a tight and peopled city as ours.

Now if Mr. Morton had come out into the open in a fair, free-swinging discussion rather than disguising his dislike of the Grand Hyatt along strict preservationist thinking, that would have been a different matter. Instead, he manages to slip in his feelings with the curt characterization ". . . the huge lobby has been made even bigger and SLATHERED in marble and shiny metals and other opulent materials." There certainly was no attempt here at any restoration. The new lobby in the Hyatt tradition, was meant to provide a "major new public space" directly accessible from 42nd Street, not removed and aloof as was the old Commodore lobby. Obviously the Grand Hyatt does not qualify as a "restored building" and was used by P/A to achieve its own editorial aims. In making its point, "Rating Reuse" has devoted 28 pages of photographs to stark architectural detail, with perhaps two to three photos including any evidence of people. One should ask . . . reuse for whom—the architectural photographer? This, to me, goes to the root of *Progressive Architecture*'s strong and ill-conceived, to use Michael Brill's apt phrase, over-identification with "only one of the flowers in the field . . ."; it goes too often to a point where the user's needs seem to have a far lesser priority.

Peter Samton
Gruzen & Partners
New York

Mark Ross

Gruzen & Partners/Der Scutt

Grand Hyatt ballroom, before and after.

[Peter Samton points out that restoration of the hotel was never the client's intention. We realize that, and our reference makes it clear. What justified its inclusion in our introductory text is the publicized restoration of one part, the ballroom, as one of the salient features of the remodeling. The promise of the ballroom's restoration was held out to the public and the design community as one of the virtues of a project that did require public support. It does not get the architects entirely off the hook to say simply that the press releases were false and that P/A should not have taken them seriously; the architect has at least some obligation to reconcile public statements about architecture with what is in fact being done. Our knowledge of the restoration was based on three publicity sources, one of which was released on the letterhead of Gruzen & Partners, and states that "The ballrooms . . . will be restored to retain their traditional ballroom flavor. . . ."

Admittedly, it would have been preferable for our editor to have discussed the matter more fully with the architects to find out what efforts had been made to restore the ballroom and how the architects viewed the outcome. Beyond that, the few comments made in the introduction are "open," in that there is no covert purpose of attacking the rest of the Grand Hyatt design. To say that the lobby is "slathered in marble and shiny materials" is, in our view, simply to state the obvious. If the powerful voice of *The New York Times* finds it pleasing, so be it.

Regarding the issue as a whole, we do not see how it could aggravate one's concern about which "flowers" we choose to pick; the prizes go to such firms as Charles Herbert & Associates of Des Moines and Lorenz & Williams of Dayton—both highly accomplished, but hardly members of any clique. We, too, are sorry about the number of unpeopled photos; we have seen several of these buildings more populated, but the techniques of photographing such places generally lead to after-hours shooting, when light can be controlled more closely.—The Editors]

Credit due

The Pittsburgh Convention Center Hotel (Dec. 1980, p. 47) was a design collaboration of Marcel Breuer Associates (MBA), New York, and Deeter Ritchey Sippel of Pittsburgh.

The Trenton Trade and Civic Center, Trenton, NJ (P/A, Jan. 1981, p. 72) was designed by Geoffrey Freeman Associates with the E.L.S. Design Group.

Correction

Cost of the Music Center, Utrecht, Holland (July 1980, pp. 82–89) was 50 million guilders, or approximately $25 million.

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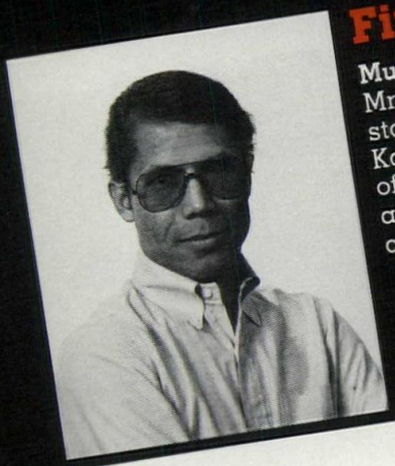

Mustafa Kanishka, Salt Lake City. Mr. Kanishka is a native of Afghanistan with architecture degrees from Kabul University and the University of Utah. He is an employee of Brixen and Christopher, Salt Lake City architects.

Second $10,000

Peter H. Frink, Robert J. Beuchat and Stephen R. Mallon of Frink and Beuchat, Philadelphia. Mr. Frink has an M.S. in Architecture, Columbia and an M.F.A. in Theater Engineering, Yale. Mr. Beuchat's M.S. in Architecture is from the University of Chile. Mr. Mallon received his Master of Architecture from the University of Pennsylvania.

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Dr. Pietro Belluschi, FAIA, Portland, Oregon. Retired Dean of School of Architecture and Planning, MIT. Currently design consultant on projects throughout the world.

Eduardo Catalano, Cambridge, Massachusetts. Professor of Architecture, MIT. Associated with Dr. Belluschi in design of Julliard School of Music, Lincoln Center, New York.

Dr. Stefan Medwadowski, Consulting Structural Engineer, San Francisco, California. Private practice is devoted to design of structures as consultant to architects.

George Hoover, AIA, Denver, Colorado. Principal in the architecture firm, Hoover Berg Desmond. Designer of major projects in the Denver area.

Dr. Jack Rouse, Cincinnati, Ohio. Head of King Productions. In charge of all creative, theatrical, design and entertainment at Taft Broadcasting theme parks.

Professional Advisor: **Elisabeth Kendall Thompson, FAIA,** Berkeley, California.

WEST WEEK '81

FRIDAY SATURDAY SUNDAY MARCH 20 21 22

A Dynamic Celebration of Los Angeles Past and Design's Present and Future, A Weekend for Business Education and Fun

Friday ***Merchandising: Its Impact and Influence on the Designer*** presented by Richard Marcus Chairman of the Board Neiman Marcus. ***90 Years in 90 Minutes:*** A multi-projector presentation of L. A.'s interior and architectural design history presented by Jody Greenwald ASID IDEC Coordinator Design Programs UCLA. ***The Office in Transition:*** A PDC TWO presentation on technological developments that are reshaping the office of the future. ***The Commuter Ticket Promenade:*** A special walk through PDC showroom events while entering a drawing to win an expense paid vacation for two in Acapulco.

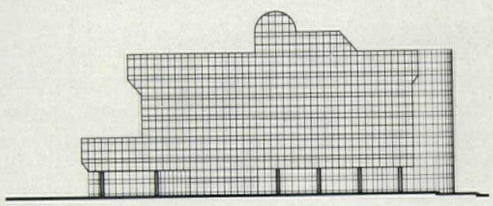
Saturday ***Your Turn - My turn:*** A presentation by PDC TWO (the Second Floor Contract Furnishings Association). A day of dialogue with internationally recognized designers who have influenced our office, health care, industrial, residential environments. ***Computer Graphics and Design in the Eighties. Computer Graphics and Return on Investment. Computer Graphics and Human Creativity.*** A full day of seminars featuring Charles M. Eastman Director Institute of Building Sciences Carnegie Mellon, Robert Parfet Vice-President Computer Graphics SLS Environetics, Donald R. Fullenwider Principal Architecture Computer Group Albert C. Martin & Assoc., Charles Reeder Partner Computer-Aided Design Group. Starring ***The Interactive Graphic Computer*** a fully operative display housed in the rotunda of PDC's Grand Mall featuring equipment from Evans & Sutherlin, Applicon and Auto-trol. ***Glossary:*** An introduction to computer language a film by Charles Eames. ***Chicago:*** A computer simulated flight through downtown Chicago produced by William Kovacs of Robert Able & Assoc. ***Hollywood Cabaret:*** A dramatic celebration of Hollywood's Golden Era. Music, Dancing, Buffet, Show, Film Clips from famous movies and the drawing for the ***Lucky Commuter.***

Sunday ***The Great American Yankee Band:*** A band concert in celebration of ***Los Angeles Bicentennial*** and PDC's ***5th Birthday*** followed by a presentation of the ***Otis Parsons Scholarship Award. Cities of the Future:*** A lecture/slide presentation followed by a dialogue with Paolo Soleri creator/founder of Arcosanti. ***All That Jazz:*** A musical fashion review, the costumes, music, dances of Hollywood's Golden Era.

Thursday Pre-Market. ASID; ***National Industry Foundation West Coast Seminar***

Monday Post Market. IBD Student Rally: ***Perspective '81.***

The Market Event of The West!



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P/A News report

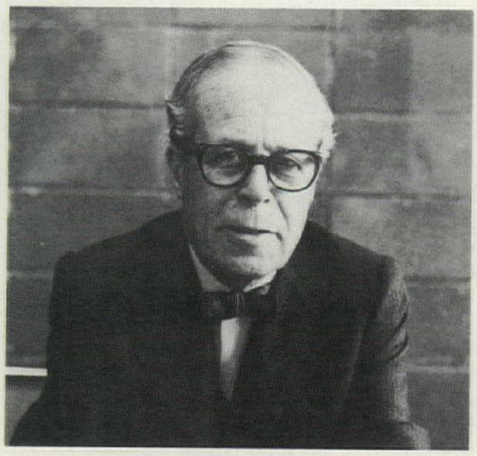
Sert named AIA Gold Medal winner

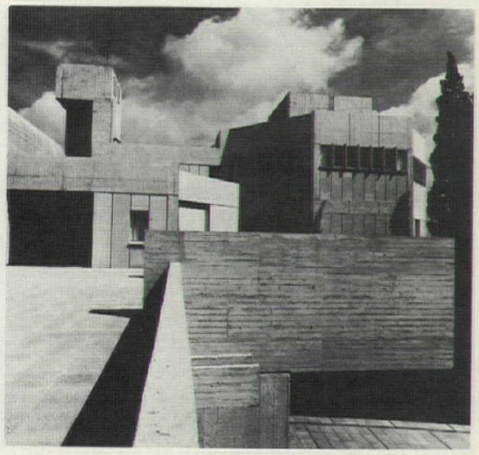
The American Institute of Architects has this year bestowed its highest honor, the Gold Medal, upon architect and urban planner Josep Lluis Sert, FAIA, of Cambridge, Ma. In naming the 1981 winner of the award, which recognizes "most distinguished service to the architectural profession or to the Institute," the AIA cited the far-reaching concepts of artistic collaboration and social awareness that Sert brought to the practice of architecture.

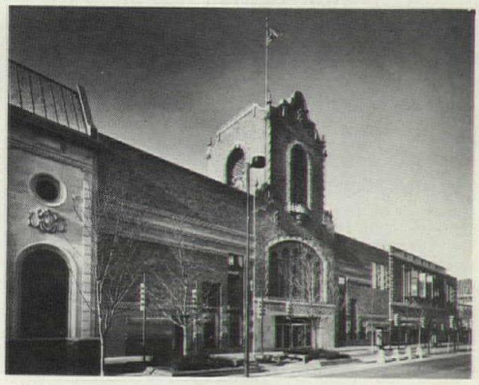
A native of Barcelona, Sert received his Master of Architecture from Barcelona's Escuela Superior de Arquitectura. During the decade 1929–39, he joined an international group of experimental architects at Le Corbusier's atelier in Paris, helped form the International Congresses of Modern Architecture (CIAM), and was a member of GATEPAC, a group of architects in Barcelona affiliated with CIAM.

Sert and Luis Lacasa designed the Spanish Pavilion for the 1937 Paris Exposition, but when Spain's republican government collapsed two years later, Sert moved to the United States. In New York City, he founded the firm of Town Planning Associates, with Paul Lester Weiner and Paul Schultz. He taught at Yale University and then served as dean of the Harvard Graduate School of Design from 1953 to 1969. He opened his own office in Cambridge in 1955, and a few years later formed the partnership of Sert, Jackson & Gourley—now Sert, Jackson & Associates.

Sert's firm has won many AIA awards, including, in 1979, two Honor Awards: one for the Joan Miró Foundation/Center for Studies of Contemporary Art, Barcelona, Spain; the other for the Undergraduate Science Center at Harvard University. In 1965, Sert, Jackson & Associates received an AIA Honor Award for the Peabody Terrace apartments in Cambridge. Other major works include apartment complexes at Roosevelt Island, New York; urban development complexes in Boston and Worcester, Ma, and Harbison, SC; and a French resort village. His firm currently is involved in two major projects in Saudi Arabia.







Above: Josep Lluis Sert and his Joan Miró Foundation. Below, left to right: Hugh Hardy, Malcolm Holzman, and Norman Pfeiffer; and the Madison Civic Center.

Sert wrote several books, including *Can Our Cities Survive?* in 1942, based on the principle of CIAM's charter. The 78-year-old Sert is the 42nd architect to win the Gold Medal since its inception in 1907.

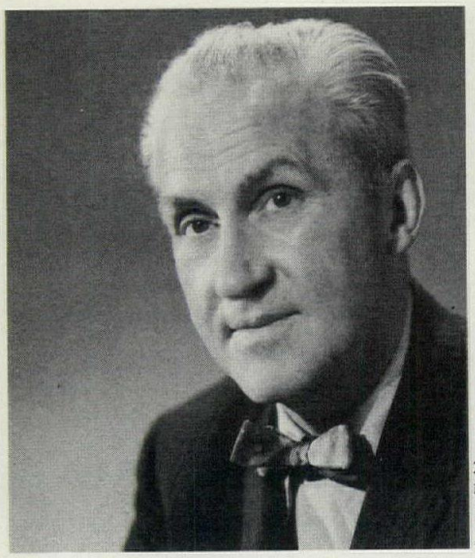
HHPA wins AIA Firm Award

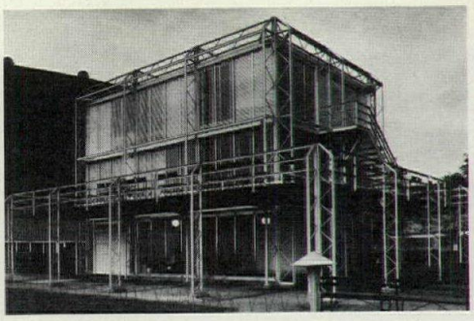
The AIA has selected the New York City firm of Hardy Holzman Pfeiffer Associates as recipient of its 1981 Architectural Firm Award. The partnership, founded in 1967 by Hugh Hardy, FAIA, Malcolm Holzman, AIA, and Norman Pfeiffer, AIA, has been involved in the design of museums, civic buildings, housing, medical and educational facilities, performing arts centers, and commercial developments. It is especially known for its work in preservation and recycling, and for its expressive design use of prefabricated building elements.

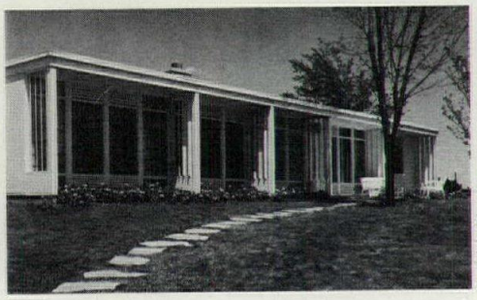
HHPA received AIA Honor Awards in 1976 for the Columbus, In, Occupational Center, in 1978 for the Cooper-Hewitt Museum in New York, and in 1979 for the St. Louis Art Museum. Among its completed adaptive use projects are the Newark Community Center on the Arts; Dance Theater of Harlem School, New York; Madison, Wi, Civic Center; and Spirit Square Art Center, Charlotte, NC. Recently completed projects include the corporate headquarters for Best Products in Richmond, Va (pp. 66–73), and the Dance Studio and Music Performance Hall at St. Paul's School, Concord, NH (pp. 74–77).

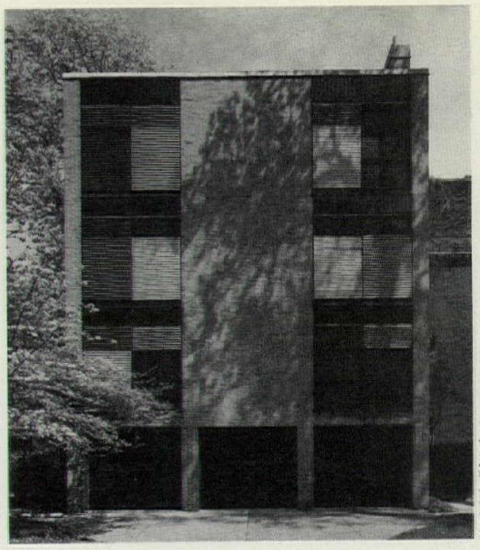
In addition to numerous awards for individual projects, the partners received the New York Chapter AIA's 1978 Medal of Honor. And in 1974, HHPA was presented the National Institute of Arts and Letters' coveted Brunner Prize in Architecture.

News report continued from page 21


Austen Field




Hedrich Blessing


Hedrich Blessing

Above left: Crystal House. Left: University Avenue building. Above: Green Pre-fab House.

George Fred Keck: 1895–1980

George Fred Keck, one of the pioneers of Modern architecture in America, has passed away in Chicago at the age of 85. Perhaps best known for his residential work in the 1950's—people in Chicago still speak with pride of owning a Keck house—his career and accomplishments are practically unknown to a younger generation.

Keck was born in Watertown, Wi, and attended the University of Illinois where he graduated with a degree in architectural engineering rather than design. Keck was an artist, however, who in his later years devoted extensive time to his watercolors. He rarely spoke or wrote about architecture, and when he did he emphasized his belief in functional design and his interest in technical innovation rather than aesthetics.

Keck's historical importance lies in two areas. In the 1930s, along with Howe & Lescaze, Raymond Hood, Kocher & Frey, and Richard Neutra among others, Keck worked to champion the principles of modern design in this country. He was also one of two early proponents of passive solar heating. Beginning in the mid-1930s, he employed large areas of south-facing glass in conjunction with either roof overhangs calculated to control summer sun or a variety of operable exterior metal louvers, including systems of exterior venetian blinds and shuttering built into window frames. Keck also experimented with roofs designed to hold water for evaporative cooling in the summertime. The development of panelized materials in the 1930s (plywood, gypsum board, etc.) spurred his interest in prefabrication, culminating in the prefab "Solar Houses" he designed for Green's Ready-Built Homes of Rockford, Il. Several hundred of these houses were erected throughout the midwest in the early 1940s.

Keck's most avant-garde work was done in the 1930s. The small brick apartment house he built near the University of Chicago in 1937 prefigures not only the IIT classroom buildings built by Mies Van der Rohe in the mid-1940s but much of the Mies-influenced residential work of the "Second Chicago School of Architecture." However, it was the experimental houses Keck designed for the 1933–34 Chicago World's Fair—"A Century of Progress"—that were his most important works. While Keck's polygonal "House of Tomorrow," sheathed continuously in floor-to-ceiling plate glass, was clearly indebted to Buckminster Fuller's Dymaxion House of 1927, the house he built at the Fair in 1934 was unique. Called the "Crystal House" and made entirely of steel and glass, it combined the ultimate constructivist aesthetic with truly progressive structural and material technology. (It had a totally prefabricated structural frame and hung metal floor and roof decks that were erected in three working days.) Designed as a symbolic evocation of life in a "machine age," technology and content were fused together in this structure at a level of intention and realization promised but never achieved in European or Russian architecture of the period.

The omission of Keck's Crystal House from the standard histories of Modern architecture is curious. Keck was appointed the first instructor in architecture at Moholy-Nagy's New Bauhaus in Chicago as its opening in 1937. Through Moholy he knew the historian Seigfried Giedion. One can only conclude that, like inadmissible evidence at a rigged hearing, the Crystal House was never allowed to contradict the official version of the development of Modern architecture.

In the early 1930s, Keck's brother William joined him in practice and, along with such long-time employee collaborators as Robert Tague, had an influence on his architecture. In the 1940s and 1950s, Keck & Keck's work assimilated a greater palette of natural materials, probably influenced by Wright's Usonian houses. In the 1950s and 1960s, the firm did larger work, municipal buildings and public housing. Their residential work was elegant and spare, reflecting the influence of Mies in a way similar to the West Coast "Case Study Houses" of Soriano and Elwood, but never abandoning their interest in simple, rational construction and passive solar heating.

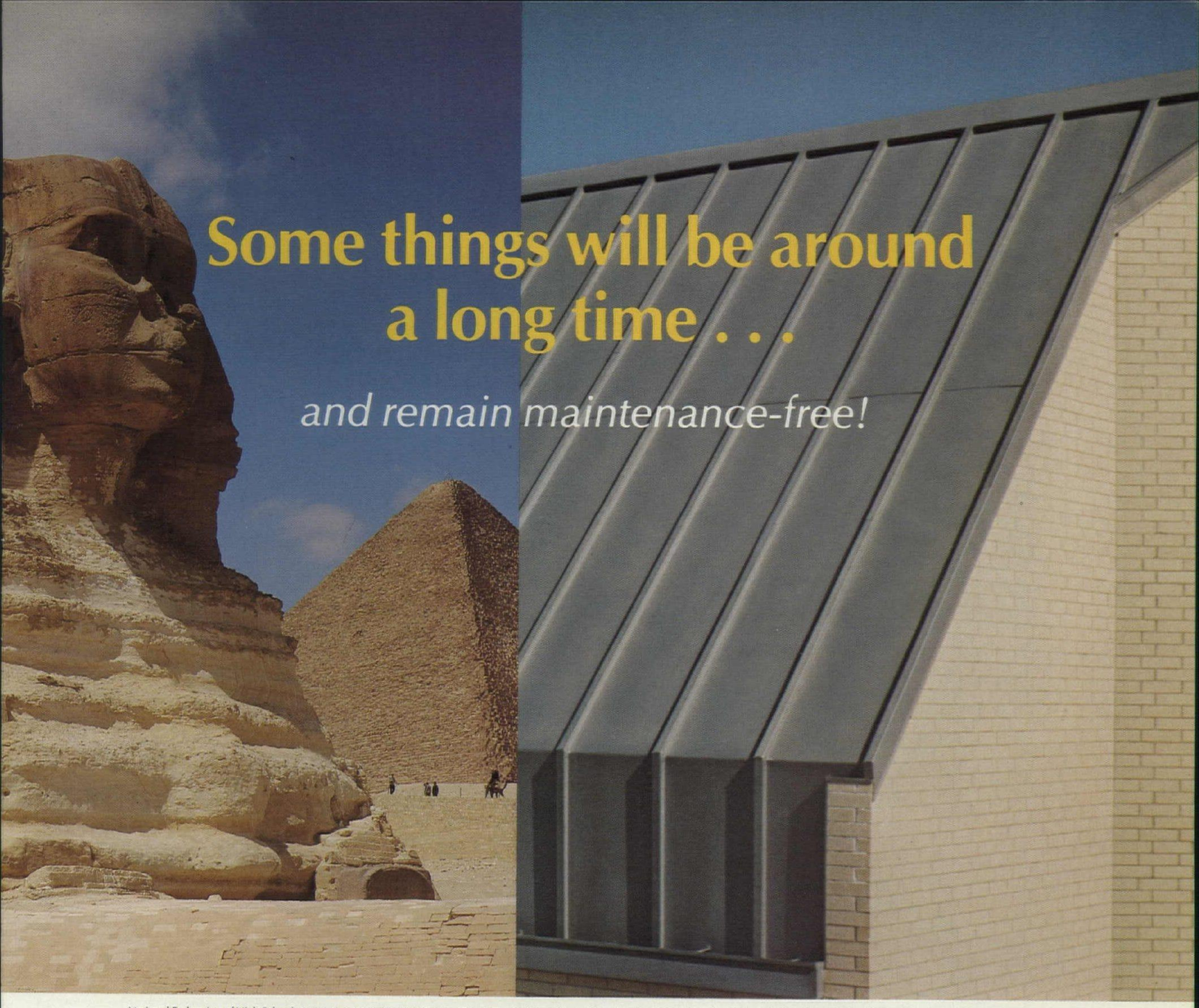
Keck & Keck's work has been the subject of two exhibitions, in 1947 at the Colorado Springs Fine Arts Center, and this past year at the Elvehjem Museum of Art at the University of Wisconsin in Madison. The Elvehjem exhibit was documented by a catalog, which is still available. Most of the drawings, photographs, and documents from Keck's office have been donated to the Wisconsin Historical Society in Madison.

George Fred Keck had a long, distinguished career. He was not a great architect but he produced works of exceptional quality. Among these the Crystal House must be counted as a moment of brilliance deserving a place in the history of Modern architecture.
[Stuart Cohen]

Infill housing competition in Chicago

While recent counter-polemics have decried the narcissism of architectural drawing exhibits, a competition for an infill townhouse in a Chicago neighborhood proves that such exhibits can exert a positive influence on the built environment.

The competition, "A House for Logan Square," was organized by the Chicago Chapter of the American Institute of Architects and the Logan Square Economic Redevelopment Corporation (ERC) and was supported in part by a
[*News report continued on page 24*]



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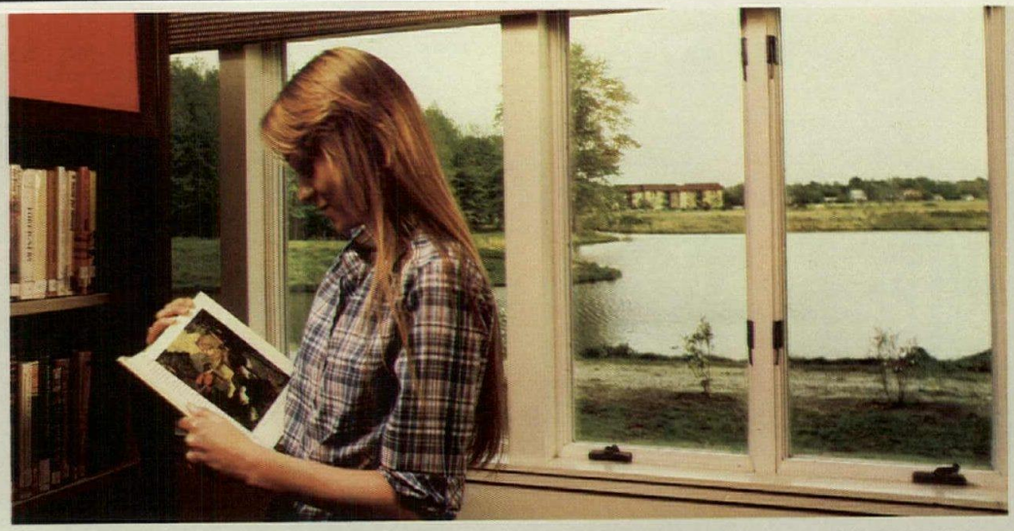

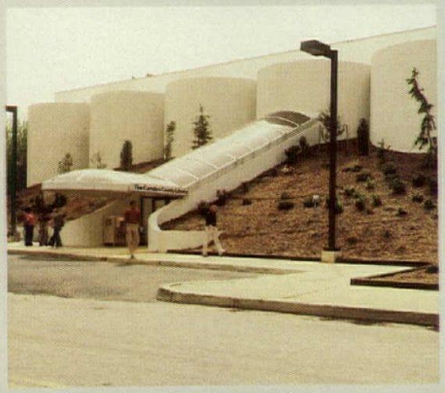

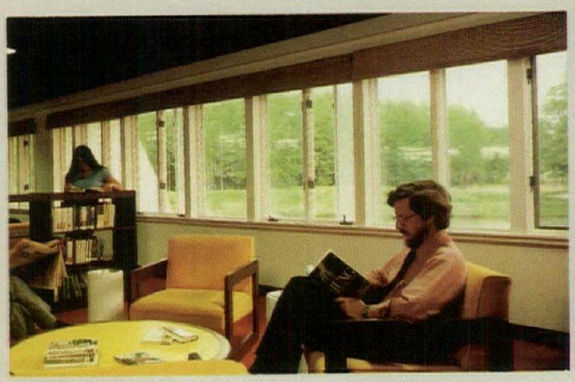

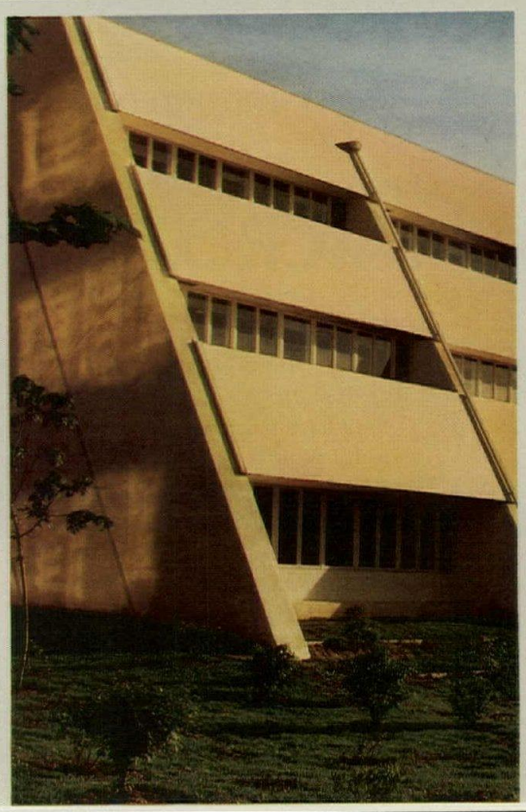

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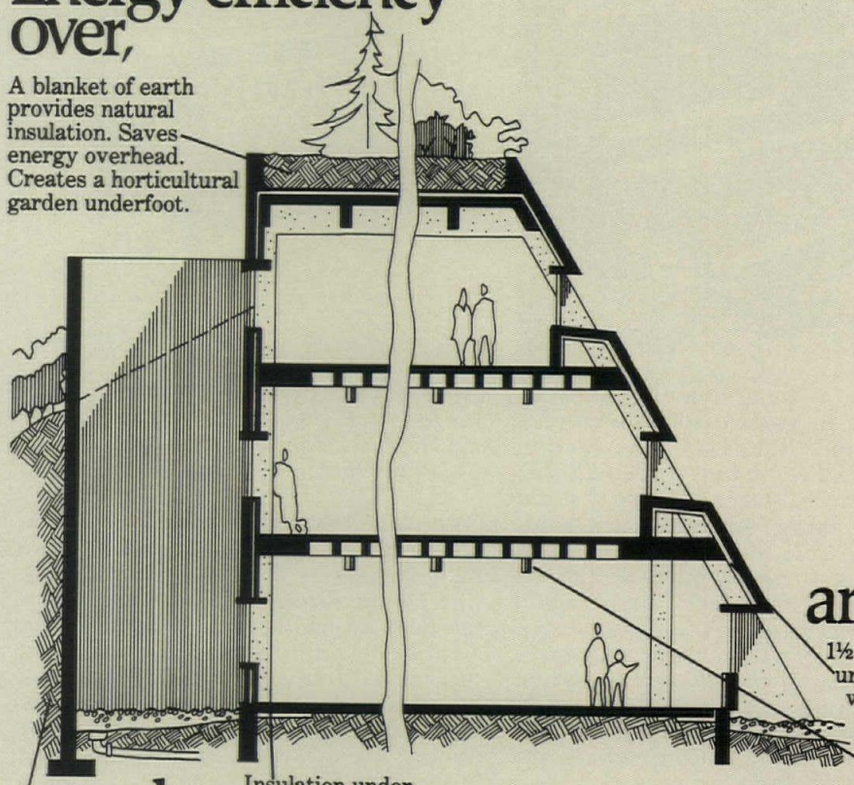

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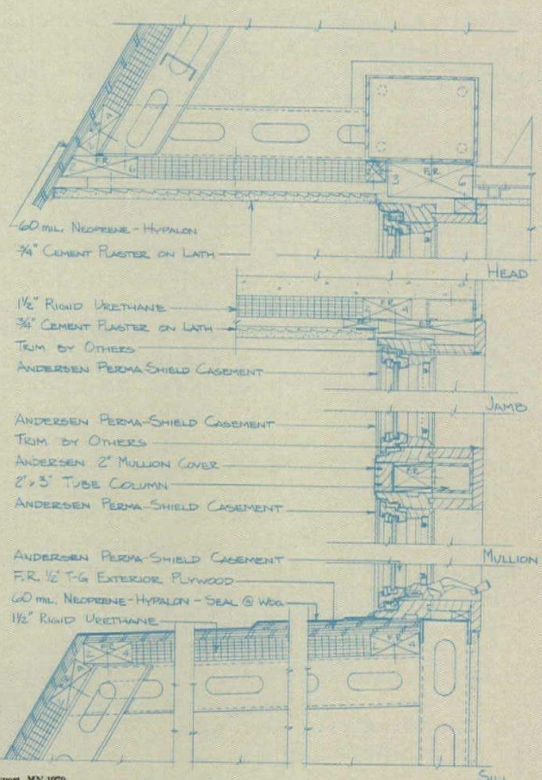

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Voorhees Township,
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Architect:
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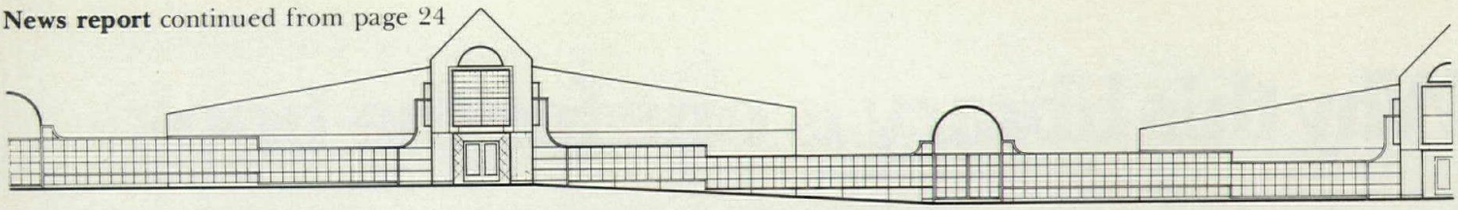
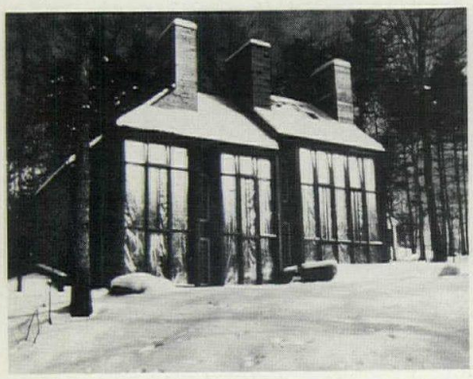
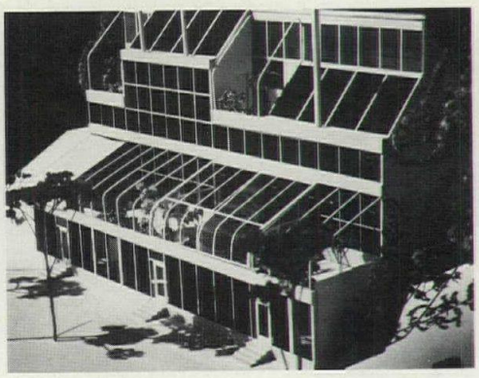
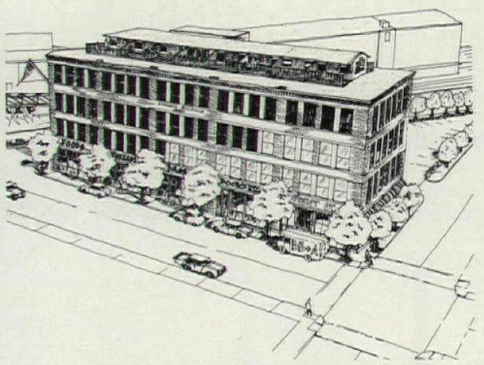








Top: Princeton Professional Park. Left: Sundance I, Reston, Va. Center: Row Housing, Kitchener, Ont. Right: Simmons Building, Providence, RI.

Energy update

Passive solar design competition
For the First Annual Passive Solar Design Competition, held in conjunction with the Fifth Annual National Passive Solar Conference last October, the jury reviewed over 350 entries and chose 20 winners in seven design categories. These designs, felt the judges, possess the qualities the competition was seeking: they are good architecture, and they are good examples (either built or buildable) of energy-conscious design.

The judges (among whom was this writer) represented a wide diversity of attitudes, and in their sequestered weekend of intense cooperation and consternation, they benefited from the interchange of opinions and the overview of the material which they inspected. The jury consisted of J. Douglas Balcomb, Los Alamos Scientific Laboratory, Los Alamos, NM; Peter Calthorpe, Van der Ryn, Calthorpe & Partners, Inverness, Ca; William Caudill, Caudill, Rowlett & Scott, Houston; Ralph Johnson, NAHB Research Foundation, Washington, DC; Douglas Kelbaugh, Kelbaugh & Lee, Princeton, NJ; William M.C. Lam, William Lam Associates, Cambridge, Ma; and Richard Rush, *Progressive Architecture*.

The prerequisite that the buildings be good architecture made the initial cut of projects a subjective but nevertheless simple procedure. The functioning energy qualities of a building are much more difficult to evaluate. In the case of a passive solar building, the interrelationship of the building form and the materials used is combined with climatic data and weather probability. It is easier to point out strategies that will definitely not work than it is to tell how well the strategy chosen will work. For this purpose, the jury was aided by a microcomputer programmed and operated by Doug Balcomb (P/A, April 1980).

There is a great quantity of work being done in passive solar home design. Not much of it is truly designed to be built as a low-budget dwelling. One could lament that fact and hope that the future will bring more efficient multifamily buildings and the tax incentives to encourage them. People who can afford to live in large, single-family homes, however, have the obligation to make them self-sufficient or at least to use an amount of energy commensurate with the amount of oxygen their owners breathe rather than the amount of land they own or the money they have invested.

The strategies employed in commercial buildings differ from those used in house designs. There are more sawtooth roofs, more attempts to create natural daylighting, simpler volumes, and an increased use of atria.

Although the greatest interest still focuses on residential construction, there is a great diversity of energy-conserving work in practically all of the different building types and sizes. Also, the fact that a building design is energy-conserving does not necessarily determine its formal vocabulary. The building vocabulary has been enriched by the strategies discussed above as well as the addition of the waterwall, the trombe wall, the solar collectors, and so on, but these are merely "words" or "phrases" in the larger vocabulary of architecture. It is possible to be Post-Modern, Modern, regionally inspired, High Tech, or Rationalist and still have an energy-conserving building.

The winners represent a wide geographical distribution in addition to the requisite building type. The winners are:

Built commercial buildings—Flat Rock Brook Nature Center (P/A, July 1980, pp. 60–63), Englewood, NJ, Daniel V. Scully, Total Environmental Action, Inc., with Ballou-Levy-Fellgraff Architects.

Buildable commercial buildings—Trust Pharmacy, Grants, NM, Edward Mazria & Associates; Shelley Ridge Girl Scout Center, Suburban Philadelphia, Bohlin Powell and Larkin Cywinski; California State Office Building (P/A, Jan. 1981, p. 138), San Jose, Ca, SOLARC Architects & Energy Consultants, ELS Design Group; Vocational Technical Educational Facility, St. Paul, Mn, Tom DeAngelo, Architectural Alliance; Princeton Professional Park, Princeton, NJ, Harrison Fraker with Short & Ford, Architects and Princeton Energy Group; Farm Credits Banks Spokane Office Building, Spokane, Wa, Walker McGough Folts Lyerla.

Buildable multifamily residences—Row Housing Project, Kitchener, Ontario, Canada, J.E. Fryett; Windcreek Condominiums, Sacramento, Ca, Mogavero & Unruh.

Retrofit multifamily residences—Manhattan Loft Conversion, New York, NY, C. Stuart White, Jr., Banwell, White & Arnold, Inc.; Solar Duplex, Berkeley, Ca, SOL-ARC/David Baker; Simmons Building, Davol Square, Providence, RI, Beckman, Blydenburgh & Associates.

Built single-family residences—Sundance I, Reston, Va, Walter F. Roberts; Solar Woodbox, Amherst, Ma, Hugh & Shirley Kirley; The Ogg House (P/A, April 1979, p. 115), Santa Fe, NM, Robert W. Peters, Alianza Arquitectos.

Buildable single-family residences—Sunshelter Design, Raleigh, NC, Mike Funderbunk and John Meachem; TVA Solar Modular Homes, Memphis, Tn, Sizemore/Floyd; Broadhead House, La Honda, Ca, Richard Fernau with Laura Hartman and Jim Axley.

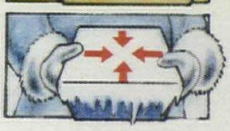
Retrofit single-family residences—Waugh Residence, Eskridge, Ks, Christopher Theis; Pfister Retrofit, Minneapolis, Mn, Peter Pfister, Architectural Alliance.

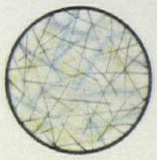
It is very rare that an architectural competition that is technologically motivated produces a complete set of outstanding results. This is especially true in the extent of new ground-breaking

[*News report continued on page 32*]

Introducing TAMKO TAM-GLASS™

a new generation of fiberglass built-up roofing products.

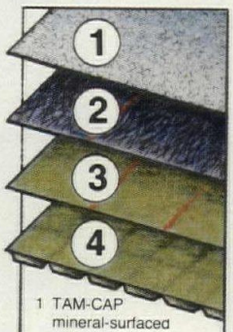




The TAMKO TAM-GLASS Built-Up Roofing System offers all the advantages of conventional fiberglass — plus improved strength and a broader product line.

TAMKO-produced fiberglass mat features improved tensile strength. Unique steps in our manufacturing process give TAM-GLASS fiberglass added strength in the cross-mat direction. The advantage is extra resistance to extreme stresses of thermal shock. And of course, this exclusive construction meets all requirements of ASTM D-2178-76, Type IV.

TAMKO is unique in offering a broader line of fiberglass built-up products. Many companies offer only the fiberglass ply sheet, giving you no choice of base or surfacing options. The TAMKO line includes two base-sheet types, ply sheet, and mineral-surfaced cap sheet.



1 TAM-CAP mineral-surfaced cap sheet
2 TAM-GLASS ply sheet
3 GLASS-BASE base sheet
4 VAPOR-CHAN venting base sheet

Plus all the advantages of inorganic fiberglass construction. Light in weight. Superior resistance to rotting, curling, warping, fishmouthing, wrinkling, buckling, blistering, and weather oxidation. In addition, its porosity permits moderate amounts of air and moisture to escape during application.

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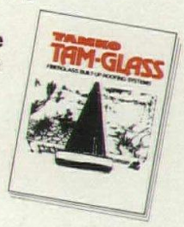

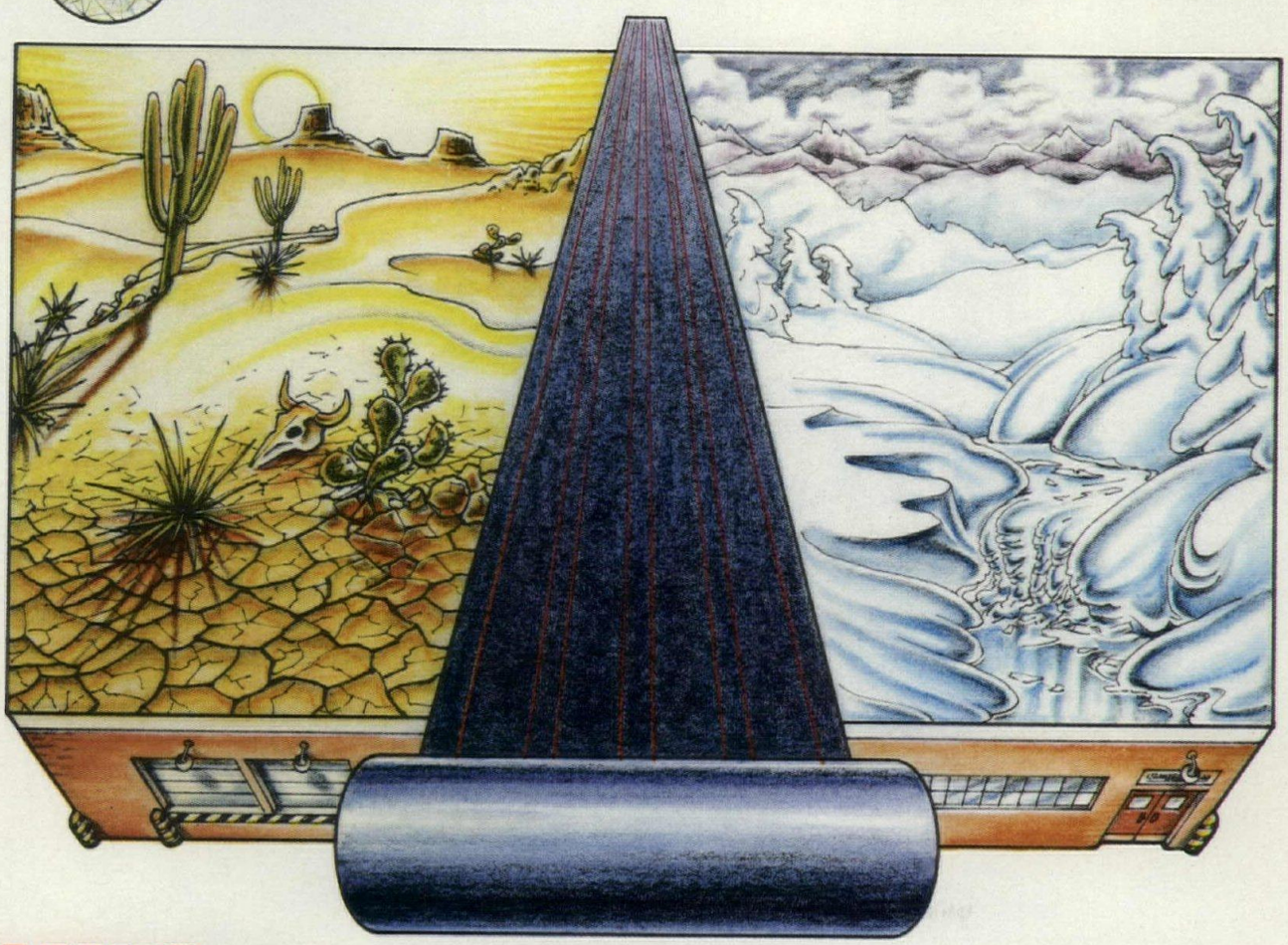

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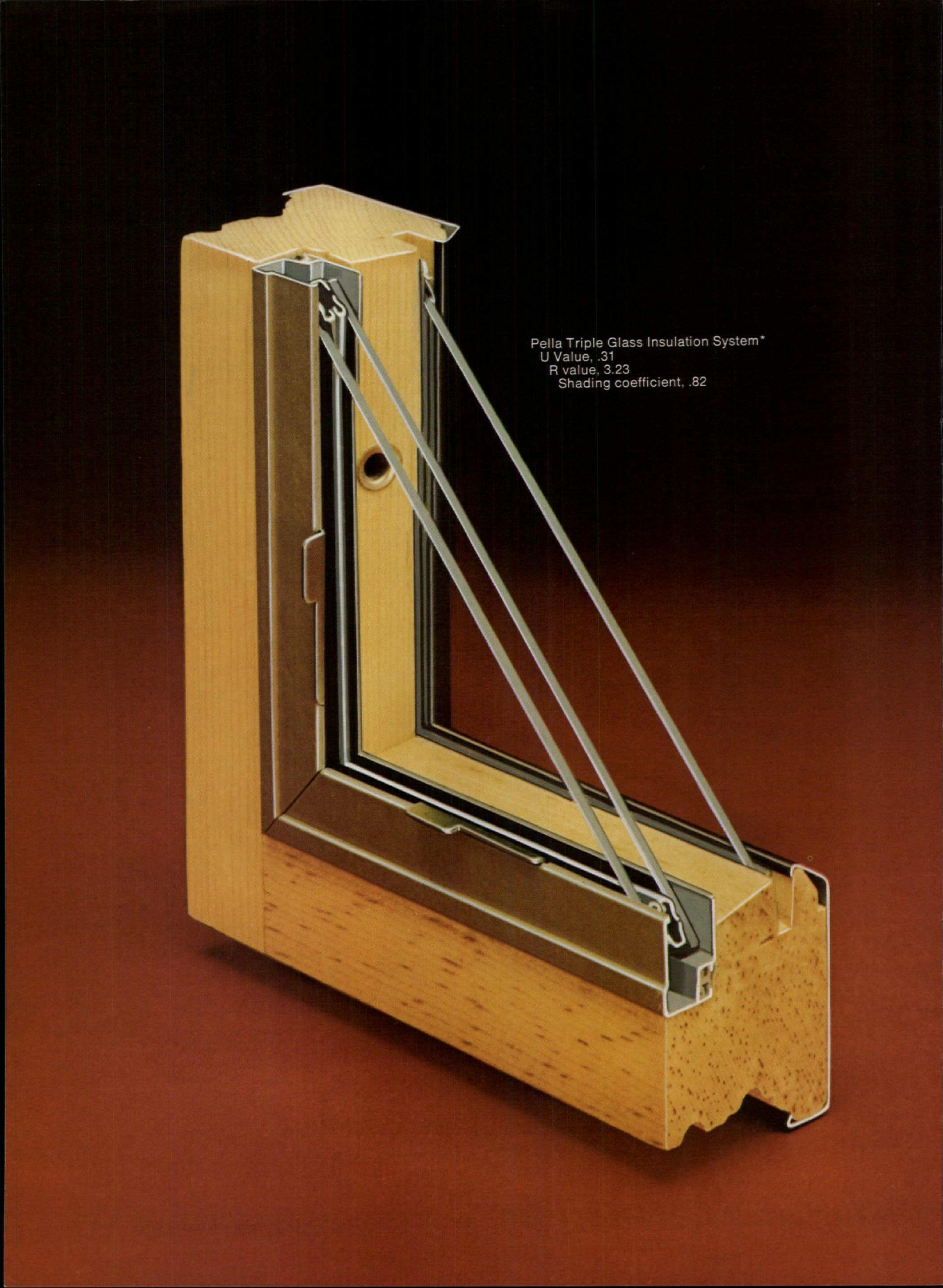
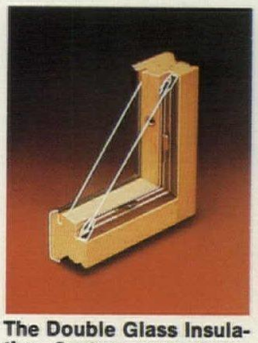

Pella Triple Glass Insulation System*
U Value, .31
R value, 3.23
Shading coefficient, .82

Now there's an economical answer to severe weather conditions...

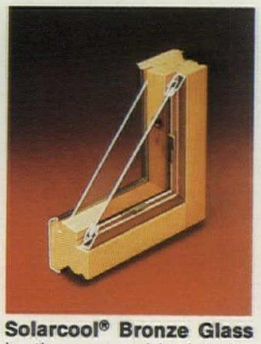
Pella's new Triple Glass Insulation System.

Here's Pella's latest energy-saving exclusive . . . the Triple Glass Insulation System. A single fixed pane of glass outside, a removable panel with double insulating glass inside, and a full ¾" of insulating air space between. This combination provides superior energy efficiency. And the price is very reasonable.

Other Pella package options for energy-economy are described below. Pella offers more energy-conserving options than any other major wood window manufacturer. All these options plus many other effective features mean a Pella package offers you the flexibility necessary to design efficient buildings for a wide variety of climates, sites and functions.



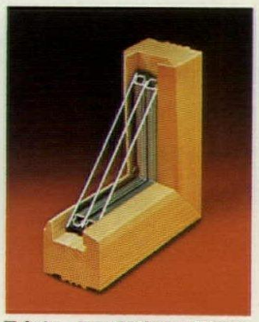
The Double Glass Insulation System outperforms welded insulating glass, yet costs less per window. (U value, .41; R value, 2.43; shading coefficient, .88)*



Solarcool® Bronze Glass in the removable interior panel can cut cooling costs. (U value, .41; R value, 2.43; shading coefficient, .59)*

Slimshade®, set between the panels of the Double Glass Insulation System, cuts heat loss and solar heat gain. (U value, .39; R value, 2.56; shading coefficient, .34)*

Solarcool and Slimshade can be combined for energy efficiency plus glare reduction with Slimshade open. (U value, .39; R value, 2.56)*



Triple Insulating Glass, ideal for large fixed units and sliding glass doors, provides outstanding energy conservation. (U value, .35; R value, 2.86; shading coefficient, .74)**

*Pella Clad Casement 2048 was used for testing. U and R values are given for the total unit. Slimshade data is for white slats tilted 30-45°. Information based on one or more of the following: ASHRAE Handbook of Fundamentals 1977; testing by Yellott Solar Energy Laboratory; testing by Rolscreen Company; testing by Dallas Laboratories; information supplied by P.P.G. U Value data based on: Outside temperature — O°F; inside temperature — 70°F; outside wind velocity — 15 MPH.
**Data based on Pella Large Fixed Clad Casement 6068

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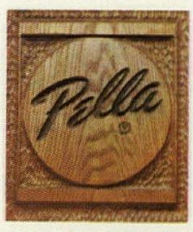

Only Pella offers it all.

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News report continued from page 28

technology. If the technology is strong enough to be visible and recognizable, one could argue that it has already achieved overemphasis and created formal imbalance. Energy-conscious design is no exception. There is a difference today between an energy competition and all others; the times are themselves in a state of imbalance from energy. Our energy needs and our supply are unbalanced at almost any scale we choose to evaluate. Until the society in which we live reachieves a balance with the energy problem, architectural solutions will reflect the imbalance. In short, only the 20 out of 350 solutions succeeded in putting the energy consciously into the building and then making it disappear. [RR]

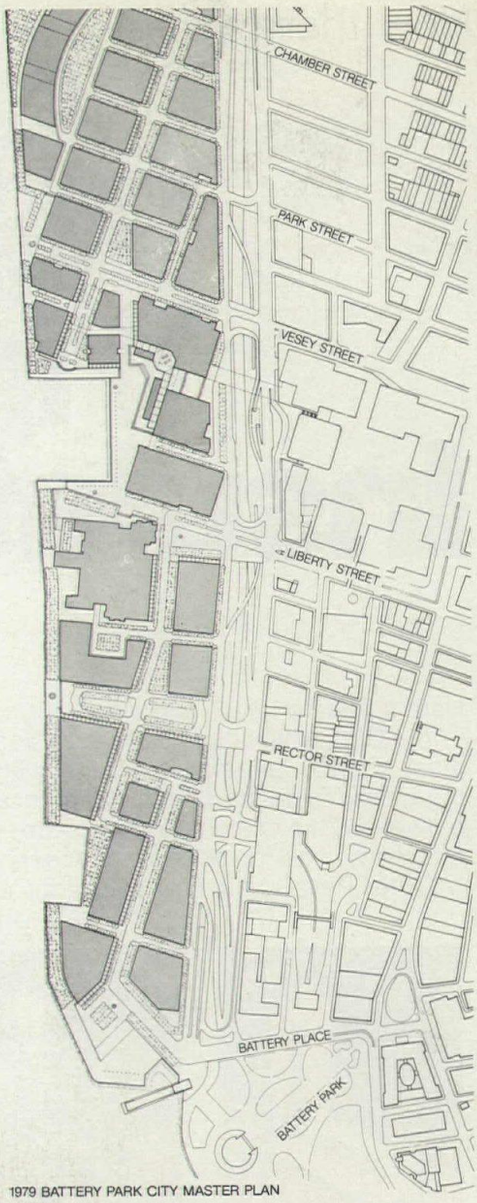
Battery Park City will rise

The unsightly docks of the working edge of Manhattan, from the Battery to 42nd Street on both the east and the west sides, became economically obsolete by the 1940s. In their 1947 book *Communitas,* Paul and Percival Goodman proposed the proper course for New York City: "By taking advantage, for the first time, of its rivers—hitherto almost prevented by commerce and industry—it can become a city of neighborhoods wonderful to live in, as leisurely and comfortable as it is busy and exciting. What is needed for this is a Master Plan."

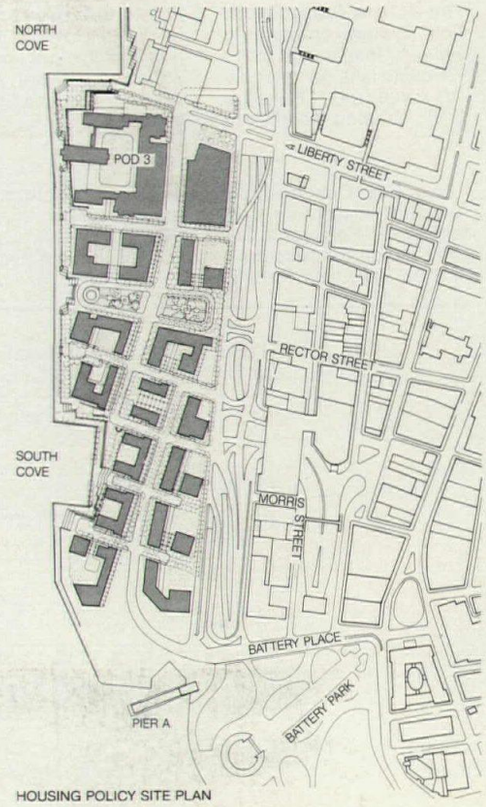
Since the grid was laid out around 1800 as an expedient development for accessibility and clarity, Manhattan has not had an accepted plan for development that solves the question the Goodmans posed of New York's edge versus its center. The grid, a neutral Cartesian system, depends upon incidence to activate it. In Manhattan, this is provided by a rectangular grid distinguishing east-west from north-south directions and thus creating streets versus avenues. The grid is actively modified by the sinuous stretch of Broadway, formerly the road to Albany, which creates major crosstown streets and "squares" each time it bisects an avenue; by the old, irregular enclaves such as the Battery or Greenwich Village; and by the topography of hills with their commensurate landmarks, such as St. Patrick's, St. John's or City Hall.

An essential question raised by a grid, however, is how to end it. As industry usurped the island's edge, Manhattan developed a central spine of public places and activities along Fifth Avenue and Lower Broadway. Central Park reinforced this center and demonstrated the withdrawal from the edge. But as the water edge has become available for development, the city has not come to terms with its role as a dominant public entity, which has the potential to make the city cognizant of its island characteristics.

[*News report continued on page 36*]



1979 BATTERY PARK CITY MASTER PLAN



HOUSING POLICY SITE PLAN

Rockefeller Center, New York
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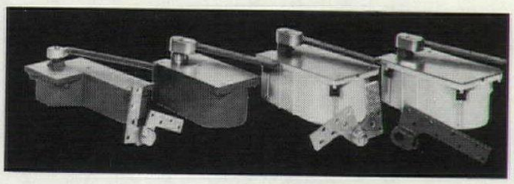

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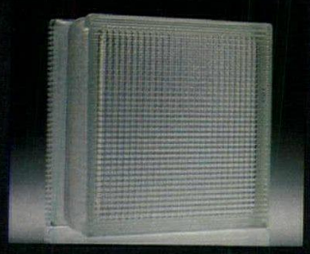

▲ ESSEX® Glass Block
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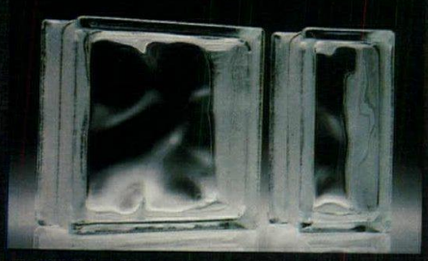
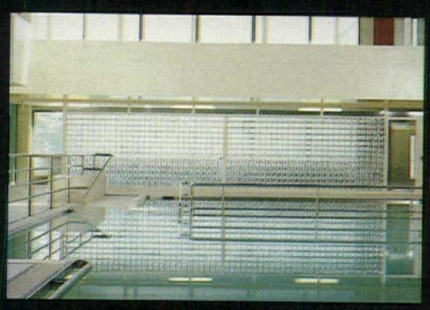
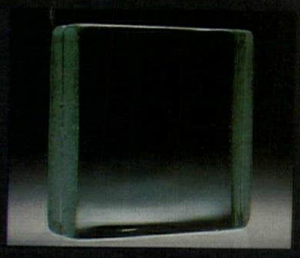
◀ SOLAR REFLECTIVE Glass Block (Available mid-1981) Maximum energy conservation. VUE® block pattern with highly reflective, thermally bonded, oxide surface coating which reduces solar heat gain and transmitted light.

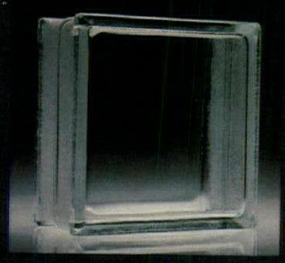


DECORA® Glass Block ▲
Pattern pressed into inner faces, smooth outer faces. Maximum light transmission and brightness. Available with a fibrous glass insert to control brightness, glare, solar heat gain and light transmission.



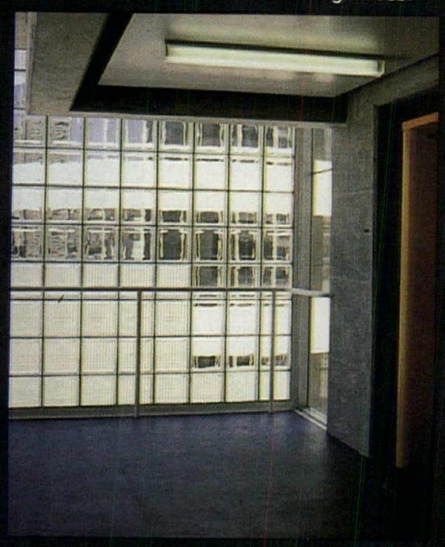
VISTABRIK® Solid Glass
Smooth outer surfaces. Solid glass offers excellent light transmission and maximum protection from forcible entry. ▶

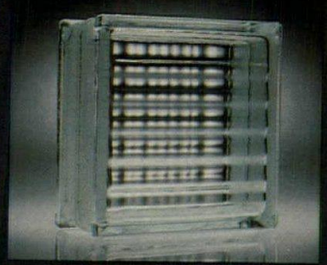


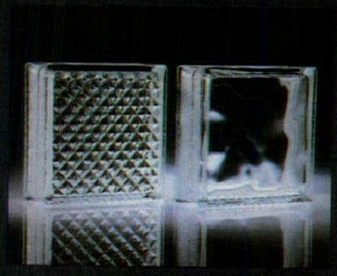


VUE® and ARGUS® Glass Block
◀ VUE® provides maximum visibility and light transmission, inner and outer faces are smooth.

ARGUS® has rounded flutes at right angles on inner faces. Maximum light transmission and brightness. ARGUS® ▼







THINLINE glass block, 3⅛-inch thick, are available in DELPHI™ and DECORA® patterns. DELPHI™ has smooth outer faces with a multiple, triangular pattern on the inner faces which produce a prismatic effect. Good light transmission and excellent privacy. ◀

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News report continued from page 32

The original piers were like "fringe" at the edge of a carpet. The first Battery Park plan of 1966 envisioned a megastructure or linear city as a "border" at the edge of a carpet. The new 1979 Master Plan by UDC consultants Alexander Cooper Associates (now Cooper Eckstut Associates) proposes to downplay the issue of the edge. It suggests instead to extend the grid onto the 92 acres of landfill and to rely on the traditional space of the city—the street.

The proposed grid is made up of both the Manhattan grid and a grid generated by the water edge. It contains two groups of middle- to luxury-income housing around a commercial center adjacent to the World Trade Center. The northern housing is to have 5900 to 7700 units, and the southern housing, 6500 to 8500, all constructed and marketed with no government assistance. Each housing group would have services on an arcaded and tree-lined avenue. The commercial center, with six million sq ft of commercial space and 150,000 sq ft of retail and entertainment area, is located so as to extend to the water's edge certain of the World Trade Center facilities: transportation hub, retail mall, and tourist attraction. The housing is to be permitted to rise about 30 stories, and the commercial complex 30–50 stories.

Since the megastructure plan of 1969 failed as a "take all or nothing" proposition, this new strategy has the pragmatism of New York's original growth. And because the original Battery Park City Authority (now merged with UDC and directed by Richard Kahan) has spent most of its bond-derived money, new building will be undertaken by private developers, given incentives.

Three housing towers with 1700 dwelling units, remnants of the 1969 proposal, are now being built, but the new plans aim to regain solvency by staging the commercial center's construction next. The American Stock Exchange, which was going to locate in the commercial area, has retracted. Nevertheless, the Canadian firm Olympia & York Developments Ltd. recently successfully bid to develop the whole center; it is conducting a limited competition for the architectural design of the mixed-use complex. At present, the contenders remain (from an original field of seven) Cesar Pelli & Associates and Mitchell/Giurgola Associates, with Zimmer/Gunsul/Frasca Architects.

As a number of waterside urban areas that formerly served the vital shipping industry become available, many American cities will be confronted with similar problems regarding new development. New proposals will become test cases for this common condition. These schemes should be analyzed for the typology of their edge pieces. In terms of such an examination, a few questions arise about the proposal for BPC, which ultimately could be resolved in future development:

1 The Battery Park City grid proposal allows neither the orthogonal nor the diagonal pattern to dominate, possibly creating a disorientation that the grid was intended to prevent. The mostly square blocks are atypical for Manhattan and thus do not assist orientation.

2 The new internal dead-end avenues neither connect to the context nor relate strongly to the waterfront edge. Could not these important streets run east–west, thereby connecting to, and possibly revitalizing, the existing context?

3 Only 50 percent of the streets leading to the site from Broadway permit views of the water (three out of five leading from City Hall Park are blocked). These existing vistas are some of the few places where one can sense the water from the center.

4 Large-scaled blocks of 30-story housing do not exist in Manhattan. To achieve a scale of buildings proper for the water edge and related to the context, more careful zoning restrictions may be required. Furthermore, recent developments with low-rise, high-density housing types should be studied.

5 The 28 acres, or 30 percent open space, is made up of promenades at the edge connected by open space nodes where important streets come into the site. Chambers Street is notable as it ends in an important park, but it is questionable if this residual, nonfigural space is a suitable termination to the street that connects City Hall and ends in the grand arched entrance to McKim, Mead & White's Municipal Building. The two geometries produce many triangular intersections, all having different orientations, and seem to be coincidental rather than intentional. The "figure" of the open public space needs

[*News report continued on page 40*]

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A proven, durable system that offers an exciting alternative to traditional construction methods — and a freedom of design and conceptual versatility never before possible. Not just a wide span roof, but a complete environmental envelope that provides translucency, solar reflectivity, and esthetics. Simply put, a revolution in architectural form.

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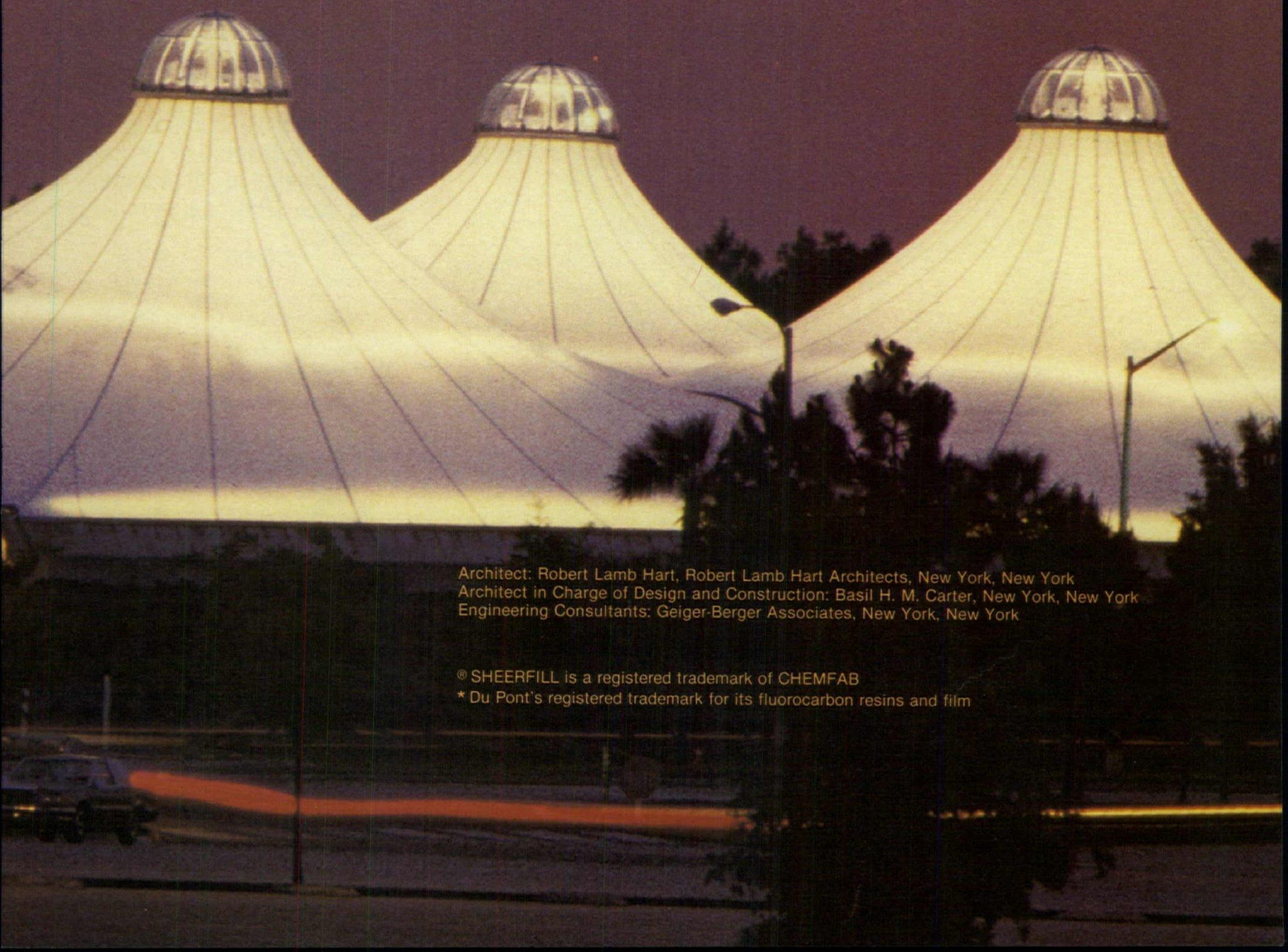

Architect: Robert Lamb Hart, Robert Lamb Hart Architects, New York, New York
Architect in Charge of Design and Construction: Basil H. M. Carter, New York, New York
Engineering Consultants: Geiger-Berger Associates, New York, New York

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News report continued from page 36

more attention as the plan develops.

While Cooper Ecstut Associates' scheme for Battery Park City was officially approved over a year ago by Mayor Koch and Governor Carey, the process of legalizing all the new street configurations is a lengthy one, and has not been completed. The Plan, then, is not yet totally frozen, and the planners claim to be still revising it, taking certain aspects, such as those mentioned above, into consideration.
[Michael Schwarting]

Michael Schwarting is a principal of the New York architectural firm Design Collaborative and is an assistant professor at Columbia University.

John L. Markham

Orlando's Tinker Building is restored

There might not be any architects alive who saw them, but the Tinker-to-Evers-to-Chance infield of the 1910 Chicago Cubs became a legend in its time, and the double-play magicians got themselves into the World Series. Hall-of-Famer Joe Tinker, who became a real estate tycoon in Orlando, Fl, and built the Tinker Building, was commemorated in 1980, on the 100th anniversary of his birth, with the restoration of his 1925 office building and its election to the National Register of Historic Places.

Mid-Florida AIA, presenting ten awards for excellence in Architecture, Landscape Architecture, and Interior Design for 1980, chose as first prize the Tinker Building, Orlando's first commercial restoration. The jury commented that it was "a fascinating renovation with sophisticated interiors that perhaps even surpass the original ones." The design has also received the George Stuart Award for Restoration (a local prize), as well as the Central Florida Builder's Exchange for design and execution of a complex wood stairway.

The design was executed by Leslie Divoll and Chalmers Yielding, a partnership concerned with preserving Florida's architectural past. The architects

[*News report continued on page 44*]

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More than ever, PPG glass is an indispensable tool for architects who wed energy efficiency to aesthetic power.

And one strength these three diverse buildings share—besides recognition of their design excellence by the AIA—is the choice of PPG glass to bring the architects' visions to life.

Look, for example, at the imaginative use of PPG's high-efficiency reflective Solarban® 550-8 (2) glass in the handsome, five-stepped international headquarters of Gelco Corporation outside Minneapolis.

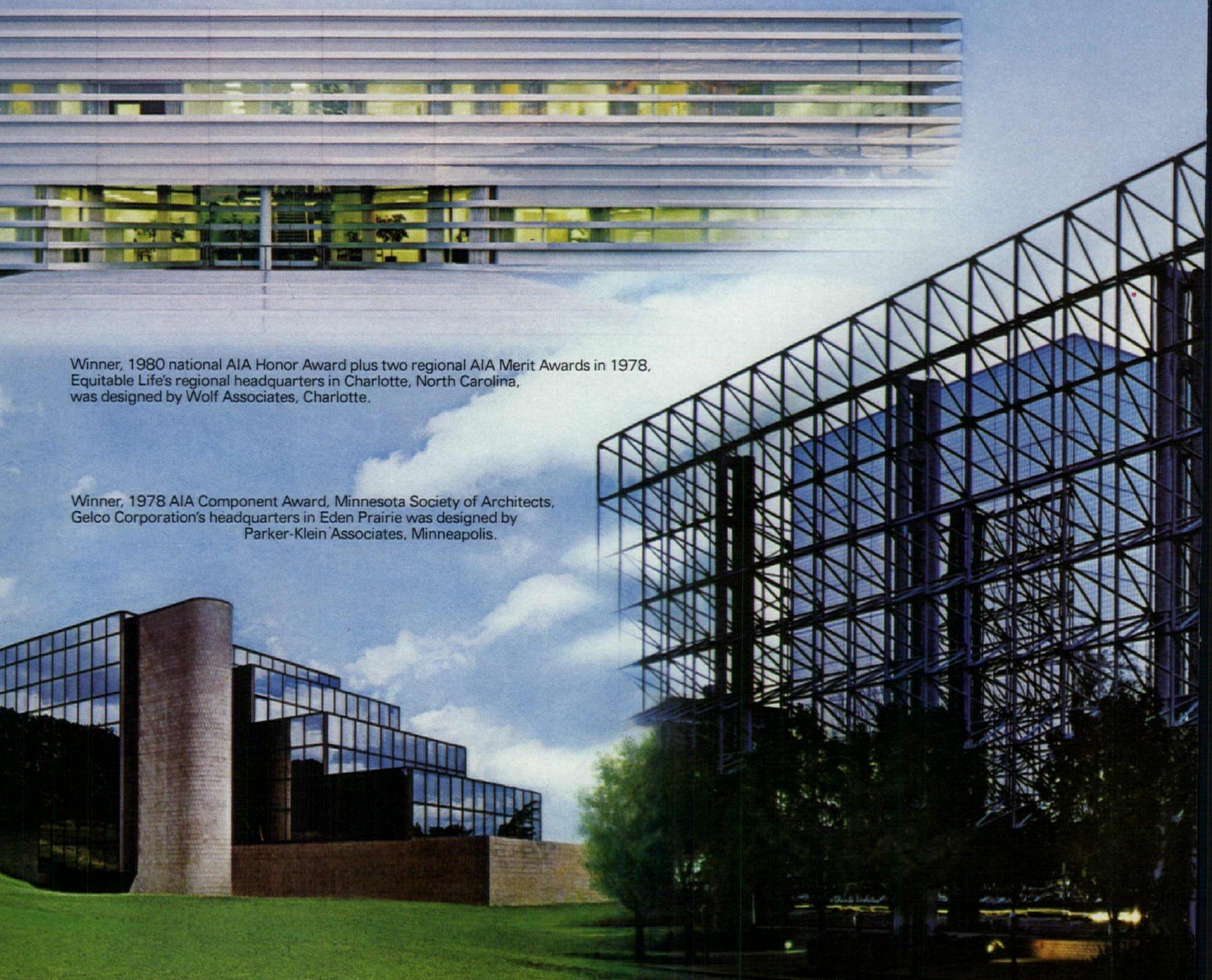
Combined with an ingenious heat recovery system, the insulating power of Solarban glass helps minimize heat loss—and gain— even in the extremes of Minnesota's climate. It's also the right glass to help the building meld with and mirror the peaceful, wooded lakefront landscape.

In warmer Charlotte, North Carolina, "solar belts" using alternating panels of aluminum and PPG clear glass gird Equitable Life's clean-cut regional headquarters. "A slick, brilliant use of glass in a simple but innovatively planned building," said the AIA jury.

The panels combine with a low-velocity fan system to capture and channel hot or cool air to where it's needed most, summer or winter. So energy costs are held down dramatically.

And even in the forward-looking architectural environment of Columbus, Indiana, the high drama created by PPG's reflective Solarcool® Bronze glass helps set Bell of Indiana's switching station apart.

The original building is hidden behind a handsome structural silicone curtain wall system. And the new addition sparkles with a combination of opaque and transparent



Winner, 1980 national AIA Honor Award plus two regional AIA Merit Awards in 1978, Equitable Life's regional headquarters in Charlotte, North Carolina, was designed by Wolf Associates, Charlotte.

Winner, 1978 AIA Component Award, Minnesota Society of Architects, Gelco Corporation's headquarters in Eden Prairie was designed by Parker-Klein Associates, Minneapolis.

AND WIN.

Solarcool glass that helps redistribute heat from the switching equipment with maximum efficiency.

PPG makes just the right glass to bring out the best in your new designs, too. All you need to prove it is a look at Sweet's 8.26/Pp.

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Winner, AIA Honor Award in 1980. Bell of Indiana's Columbus Switching Station was designed by Caudill, Rowlett, Scott of Houston, Texas.

News report continued from page 40

discovered the building beneath aluminum siding, found a sympathetic buyer (the Law Office of Russ and Manderlkern), restored the exterior, renovated the interior for contemporary offices, and as noted above, successfully listed the building with the National Register of Historic Places. Advantage was taken of the 1976 Tax Reform Act.

In the design, the library emerged as a symbolic "spine" of the attorneys' second floor. Lighting was carefully considered, and a series of skylights is complemented by glass interior partitions along the 65-ft floor-to-ceiling book shelving. The exterior uses raked joints and sandy brick, gleaned from rubble walls salvaged during reconstruction. The bricks within the rubble were those used originally on the exterior. The architects located an ancient stock of ceramic tile in the warehouse of the oldest Orlando tile distributor. The terracotta tile detailing on the cornice was left as it was.

Divoll and Yielding are currently working on four other restoration projects within two blocks of the Tinker building, which will form the core of Orlando's historic district. In fact, the firm carried out initial studies for developing the historic and demographic base for the district and pinpointed two areas for development: the Downtown Historic District, and a residential neighborhood, the Lake Cherokee Historic District. [Edward Levinson]

Calendar

Exhibitions

Through Feb. 19. Two photographic exhibits: Early Chicago Architecture—1879–1909; Prairie Seaport—Chicago 1860–1939. Gallery At The Old Post Office, Dayton, Oh.

Through Feb. The Work of Architect Paul Amatuzzo. At the Zolla-Lieberman Gallery, 356 West Huron, Chicago, Il.

Through Feb. 28. Rome Sweet Rome (17th- to 20th-Century prints). Spaced Gallery, New York.

Through March 1. Alvar Aalto. H.F. Johnson Museum, Cornell University, Ithaca, NY.

Through March 22. Pompeii: Works by French Architects in the 19th Century. École Nationale Superieure des Beaux Arts, Paris.

Through March 31. Holabird & Roche and Holabird & Root: The First Two Generations. The Chicago Historical Society, Clark St., at North Ave., Chicago.

Through April 5. The Search for Alexander, an exhibition of art from the Hellenistic era. The National Gallery of Art, Washington, DC. This exhibit will tour to the Art Institute of Chicago (May 16–Sept. 7) and thence to the Museum of Fine Arts, Boston, and to the Fine Arts Museum, San Francisco.

Through May 31. Architecture in

[*News report continued on page 46*]

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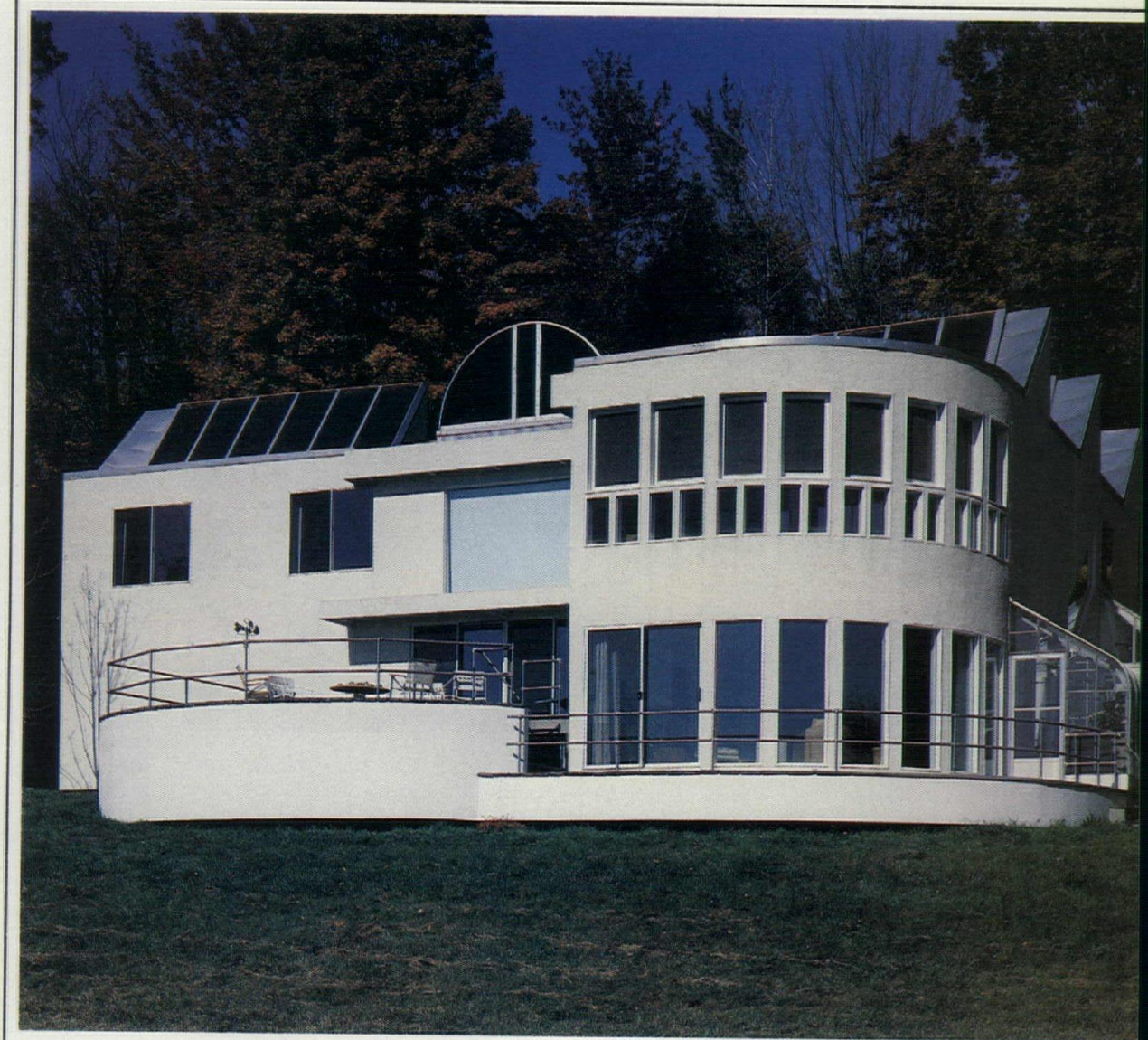

ARCHITECT: Thomas N. Larson, F.A.A.R.

This private home in Lakeville, Connecticut, faces South from a tree sheltered hilltop.

The owners, Mr. and Mrs. Gordon Reid, asked for a plan that used new design criteria based on energy efficient materials and concepts.

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News report continued from page 44

Context—360 North Michigan Avenue, tracing the history of Alfred S. Alschuler's London Guarantee and Accident Company Building (Stone Container Building). Corridor Gallery, The Art Institute of Chicago.

Through July 31. P.B. Wight: Architect, Contractor, and Critic, 1838–1925, an exhibition of original architectural drawings. Burnham Gallery of Architecture, The Art Institute of Chicago.

Feb. 2–20. Symbolic Relief: The Exploratory Architecture of J.H. Eccleston Johnson, Jr. (Texas Post-Modernism). Southwestern University, Georgetown, Tx.

Feb. 12–Mar. 7. Charles Moore: New Church Building for the Parish of St. Matthew, Pacific Palisades, Ca. Max Protetch Gallery, New York.

Feb. 14 through Mar. 17. Richard Haas: Original Proposals, Maquettes, and Models for Projects 1974–1980; Robert A.M. Stern, Architectural Projects. Young-Hoffman Gallery, 215 W. Superior St., Chicago.

Feb. 19–April 26. Expressionism—A German Intuition, 1905–1920. San Francisco Museum of Modern Art, San Francisco, Ca.

Mar. 4–15. Japanese exhibit and lecture tour honoring Walter Gropius. Hokkaido Modern Museum, Sapporo. For information contact Diana Miller, The Architects Collaborative, 46 Brattle St., Cambridge, Ma 02138.

Mar. 10–May 10. Innovative Furniture including pieces by Thonet, Belter, Eames, Josef Hoffmann, and Frank Lloyd Wright. Cooper-Hewitt Museum, New York.

Mar. 10–May 24. John Henry Belter and the Rococo Revival, an exhibition of ornately laminated Victorian pieces. Cooper-Hewitt Museum, New York.

Mar. 11–June 7. Collaboration: Artists & Architects, an exhibition of projects by 11 teams of artists and architects addressing significant architectural problems of the next decade and offering resolutions. Organized by The Architectural League of New York and exhibited at the New York Historical Society, New York.

Convention

May 17–22. AIA Convention, Minneapolis.

Competitions

Feb. 27. Submission deadline for Hexter Awards "Interiors of the Year." Entry forms and information available from S.M. Hexter Co., 979 Third Ave., New York, NY 10022.

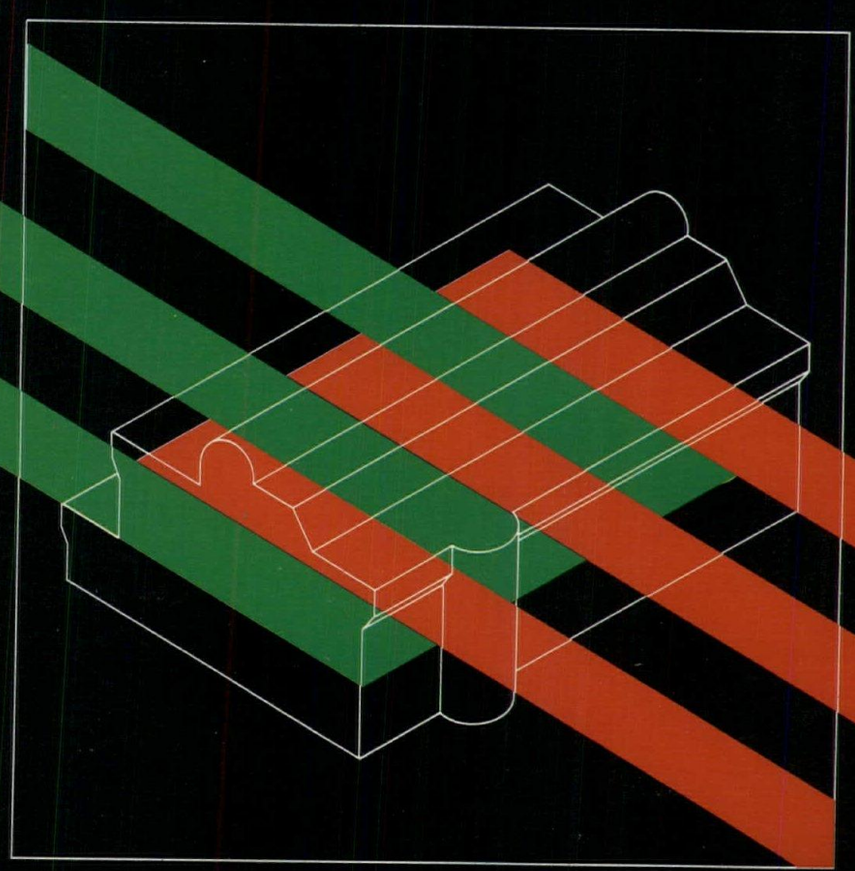
April 30. Entry deadline for Women in Design International Competition '81. All fields of design. For prospectus write Call For Entries, WID International, 530 Howard St., 2nd Floor, San Francisco, Ca 94105, Attn.: Rebecca Covalt (415) 285-9106.

WEST WEEK '81

Billed as "the market event of the west," West Week '81 is scheduled for Friday, March 20, Saturday, March 21, and Sunday, March 22. The fifth exposition by the showrooms at Los Angeles' Pacific Design Center will be accompanied by a seminar program. Richard Marcus, chairman of Nieman-Marcus, will speak on merchandising's influence on design. Paolo Soleri will discuss cities of the future. Jody Greenwald will trace 90 years of Los Angelene architecture.

And a group of researchers and practitioners will present a full day of programs on computer graphics. Entertainment will include a Hollywood cabaret night and a musical fashion review from Hollywood's golden era.

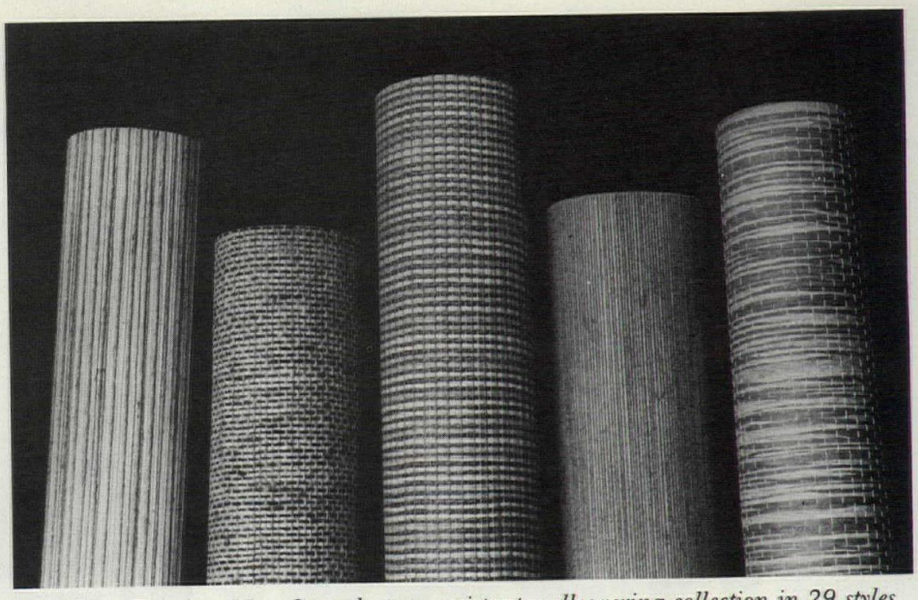
For the first time, the contract furnishings firms from the second floor of the building have formed their own PDC II association. These approximately 30 firms will present one of the highlights of the market—a group of internationally known designers who will both give formal talks and be available all day March 21 for informal private discussions. The formal symposium will be moderated by architect Richard Saul Wurman, and included among the 34 designers will be: Vico Magistretti, Tobia Scarpa, Paul Tuttle, Ward Bennett, Luigi Massoni, William Stumpf, Niels Diffrient, Emilio Ambasz, Michael Graves, Massimo Vignelli, Joseph D'Urso, and Bruce Burdick.



PDC TWO

International Design Symposium

WEST WEEK '81



Arc-Com Fabrics: *NovaStrand water-resistant wallcovering collection in 29 styles meets Class 6 and ASTM-E84 ratings.*
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All-Steel: *8000 Series comprises straight and curved panels, work surfaces, task lighting, and power panels.*
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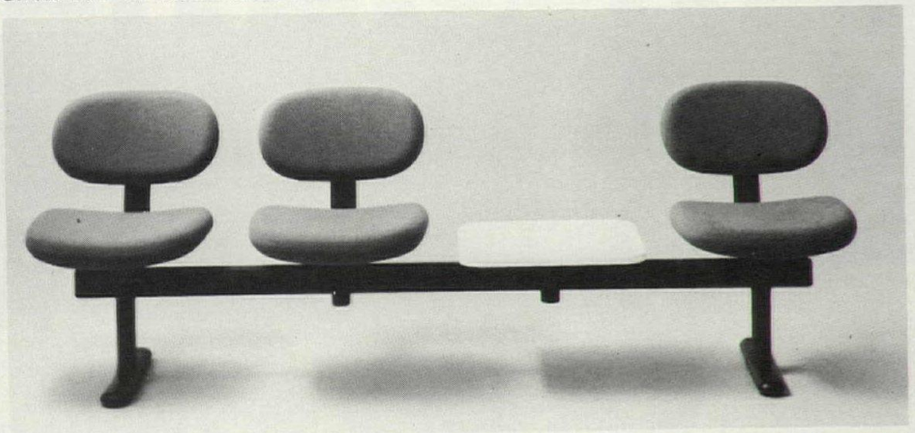

Castelli Furniture: *KS 500 beam-mounted seating, with or without armrest, has fully upholstered seat and back; table is white plastic laminate.*
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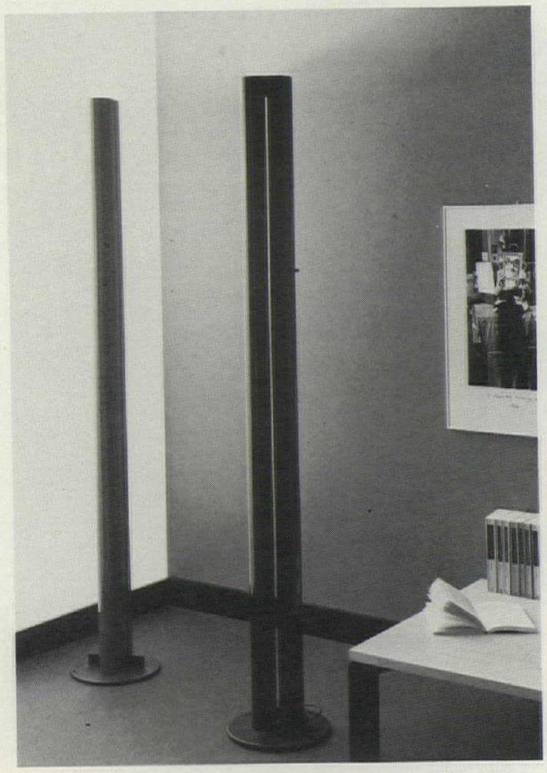
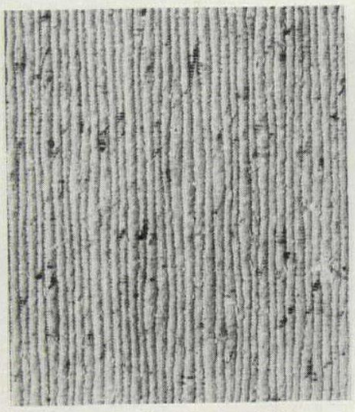


Artemide: *Megaron floor lamp designed by Gianfranco Frattini has extruded aluminum body, steel base, and glossy paint finish in black, white, red, or green.*
Circle 102 on reader service card



CrofterCraft: *Natural linen wallcoverings in 87 styles have Class A flame-spread rating; widths range from 24 to 54 in.*
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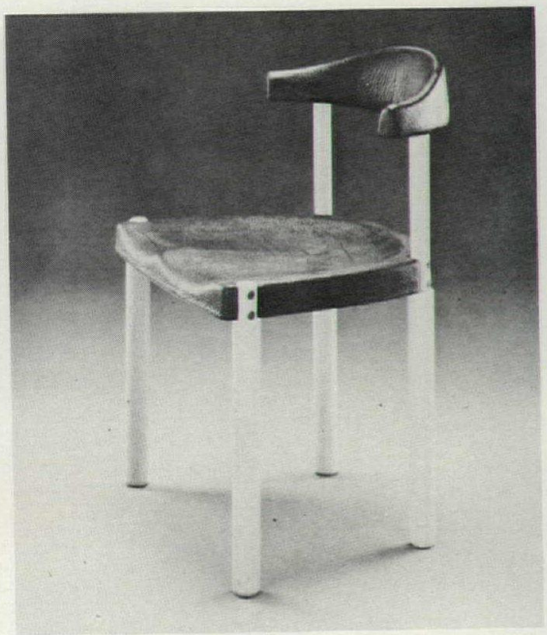

Atelier International: *Leonardo chair in armless version from a collection that includes high and low, arm and armless designs by Paul Tuttle/Alex Strassle.*
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[*Continued on page 54*]

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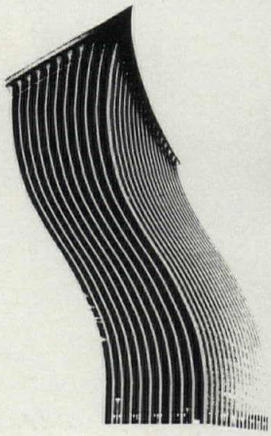

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WEST WEEK '81

Gunlocke: *Prelude double-pedestal desk with walnut legs; also available as single pedestal in oak or walnut.*
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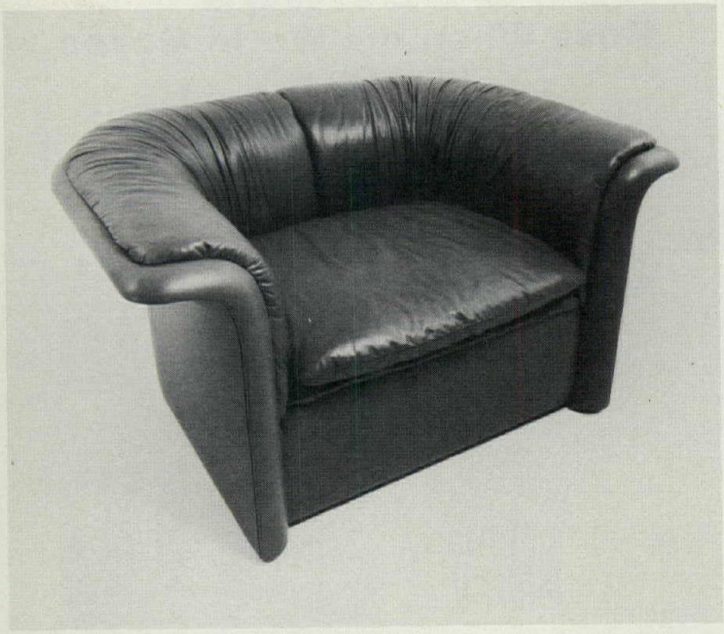
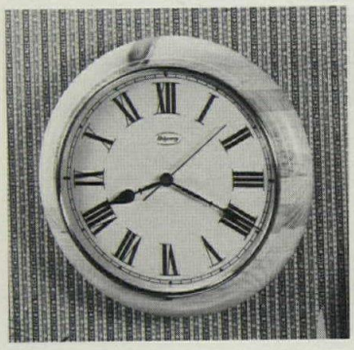
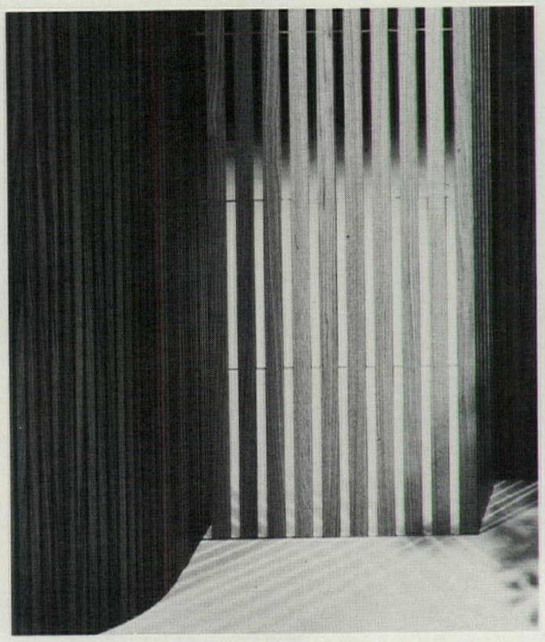


Dunbar: *Adagio lounge seating by Dennis Christiansen includes a chair, a short sofa, and a long sofa.*
Circle 106 on reader service card

Paul Hanson: *Imported large-scaled heavy glass includes swirl glass vase, cylinder, pitcher, and ring-neck vase.*
Circle 110 on reader service card



Gravely Furniture: *Decorator wall clock of pine has quartz movement, step second hand, Roman numerals, convex glass, and brass bezel; diameter is 14 in.*
Circle 108 on reader service card



Forms + Surfaces: *Fire-retardant bonded wood and tambour, with Class 1 flame-spread classification, comes in red oak, white oak, teak, or walnut.*
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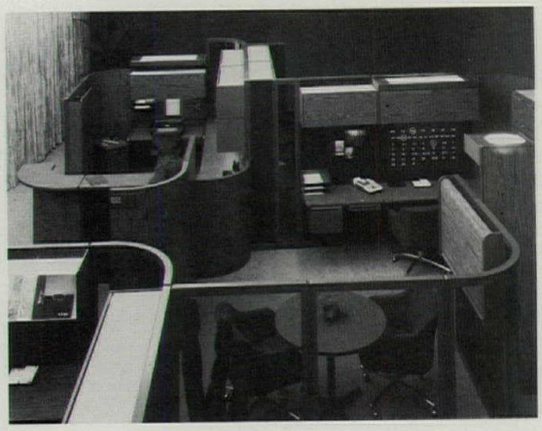

Haworth: *UniGroup open office interiors combine with TriCircuit ERA-1 panels to create reception areas, work stations, word processing areas, and similar spaces.*
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[Continued on page 58]

Portrait of a Wire Manager Managing Wire

(circa 1981)

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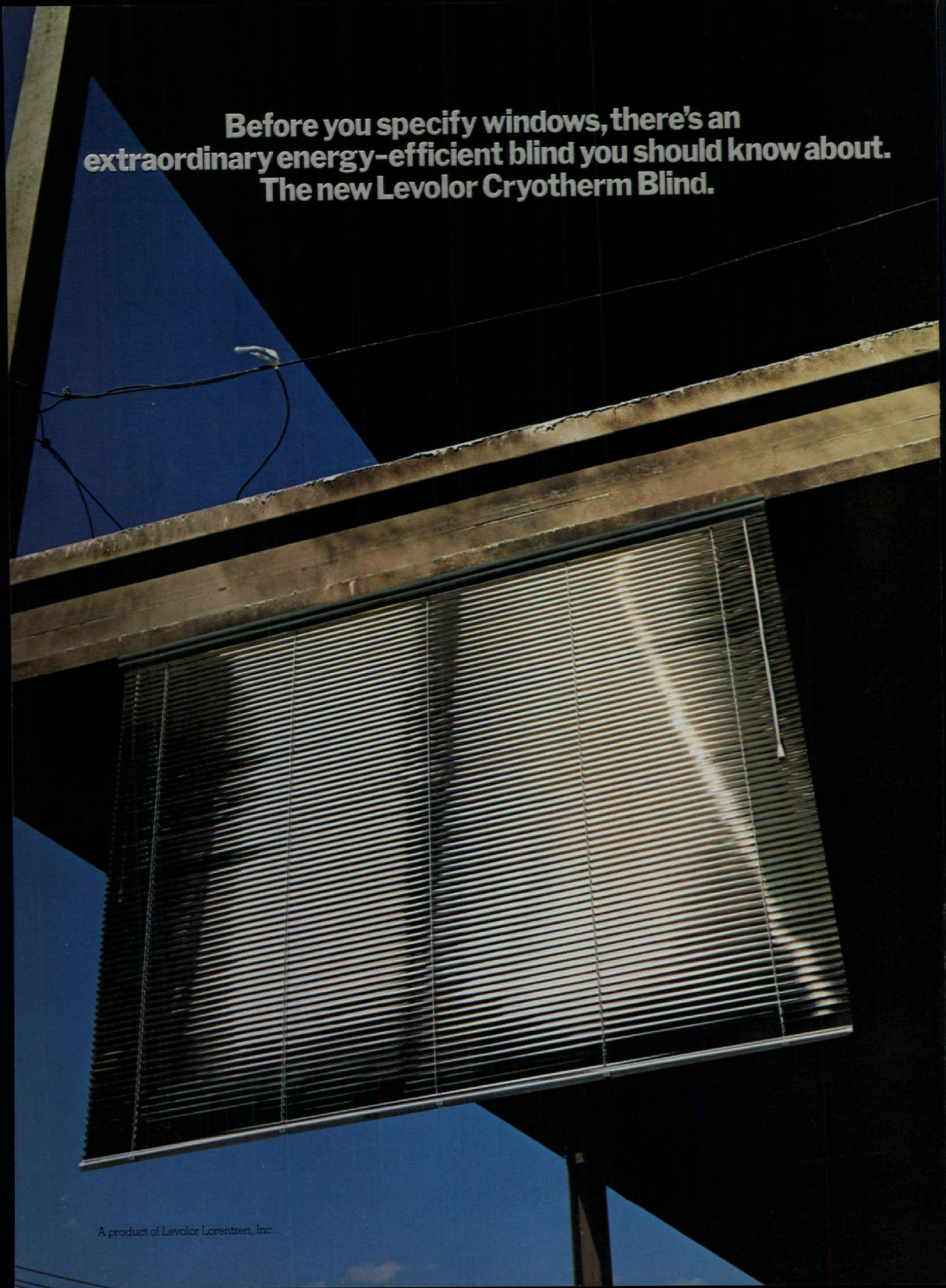
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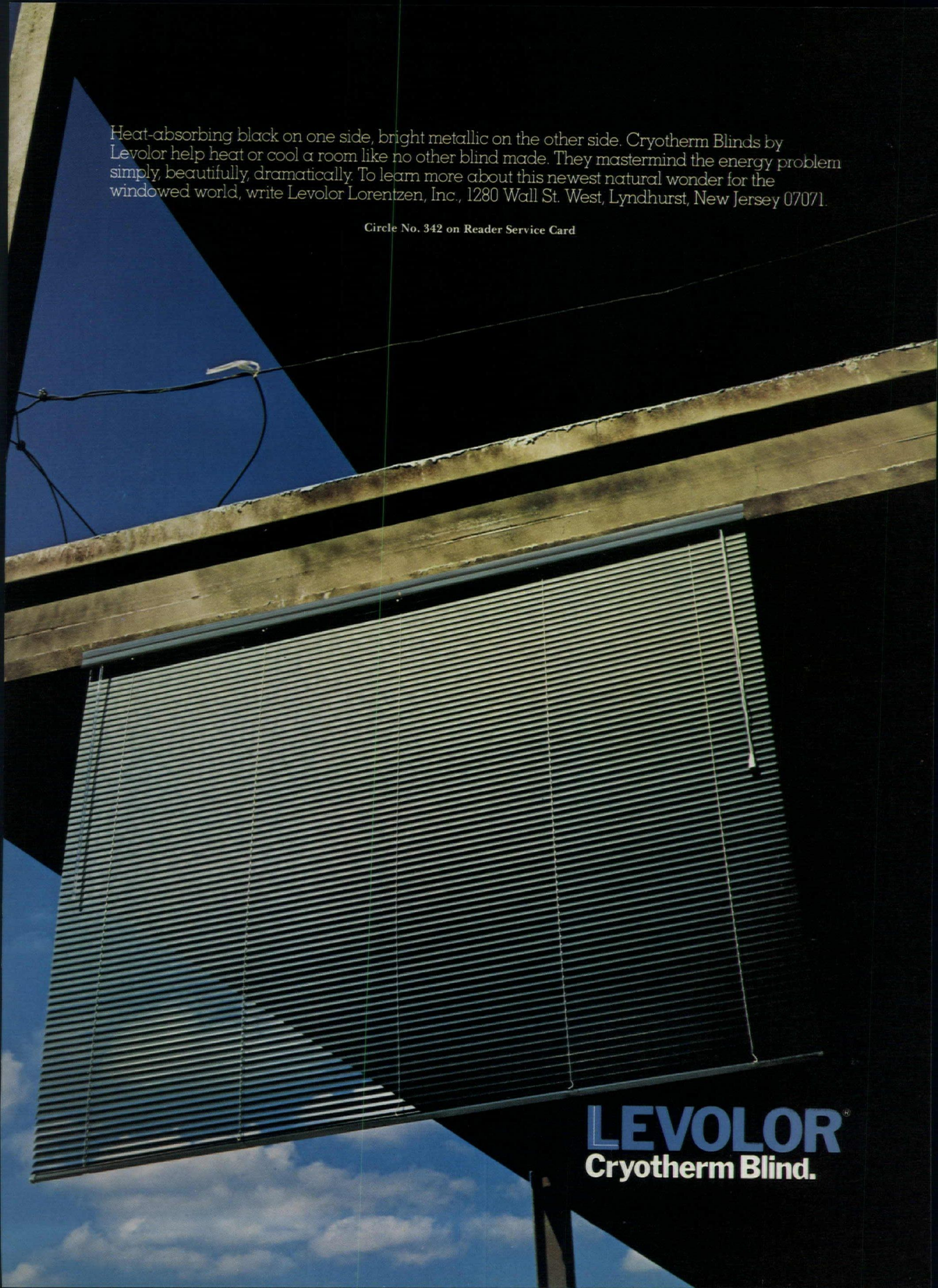
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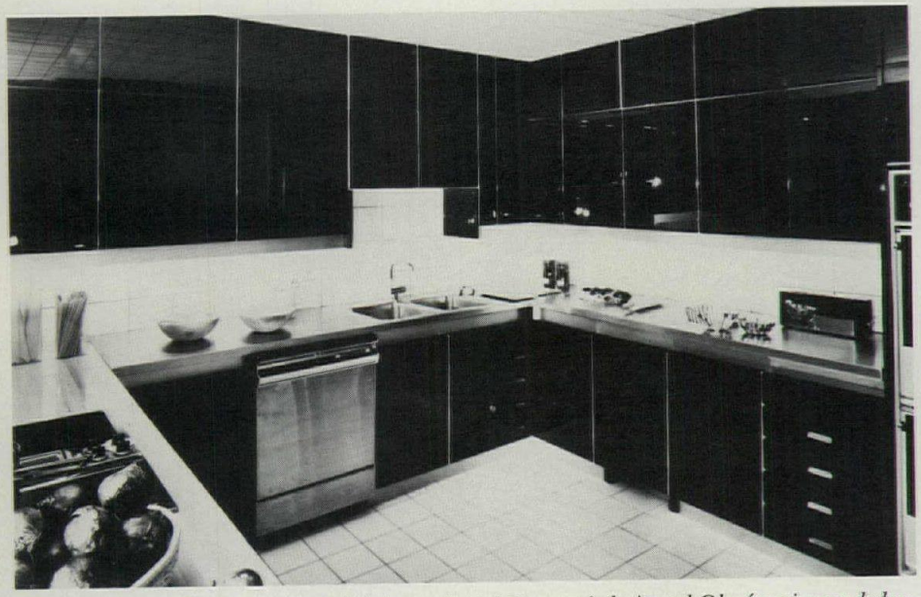
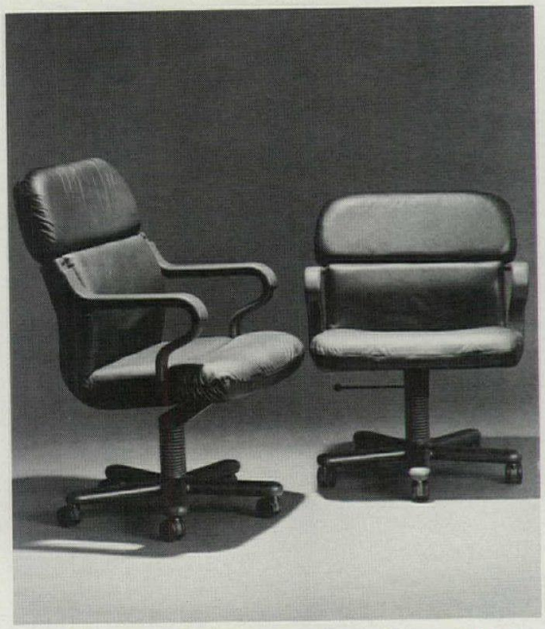
WEST WEEK '81

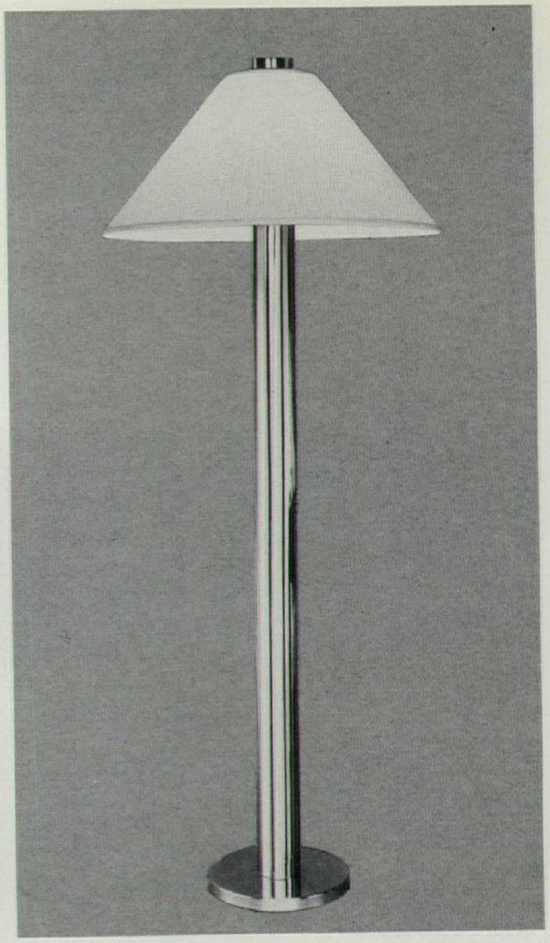


International Contract Furnishings: *Luigi Massoni-designed Glacé series modular kitchens have doors and panels of wood veneers or high-gloss colors.*
Circle 113 on reader service card

Hickory Furniture: *Designer's Choice chair of Oriental derivation is part of a collection; the chair base will also be offered as a bench.*
Circle 112 on reader service card



Knoll International: *Articulated chair in high-back and low-back versions, designed by Niels Diffrient, is covered in leather and has urethane foam armrests on tubular steel arms; five-prong base is painted.*
Circle 115 on reader service card



Koch + Lowy: *The Floor Touch lamp, designed by Peter Hamburger, turns on with a touch—dim, medium, bright, then off. Available in solid brass with pleated beige shade or polished chrome with pleated white shade.*
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Kittinger: *T725 upper wall units and T715 lower wall units of mahogany.*
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[*Continued on page 60*]

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We don't expect people at work to appreciate the classic lines of our sound divider system.

They may not notice the handsome fabric covering. Or how beautifully the dividers fit together.

They may never see the electrical raceway hidden in the base or the shelf-hanging capability.

And they can't possibly know that their privacy comes from our special sound-absorbent Fiberglas* core inside each panel.

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*T.M. Reg. O.-C.F. © O.-C.F. Corp. 1978

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WEST WEEK '81

Herman Miller: *Burdick Group™ office furniture comprises paper handling and storage elements, work surfaces, and electronic equipment supports that can be arranged or rearranged to suit needs.*
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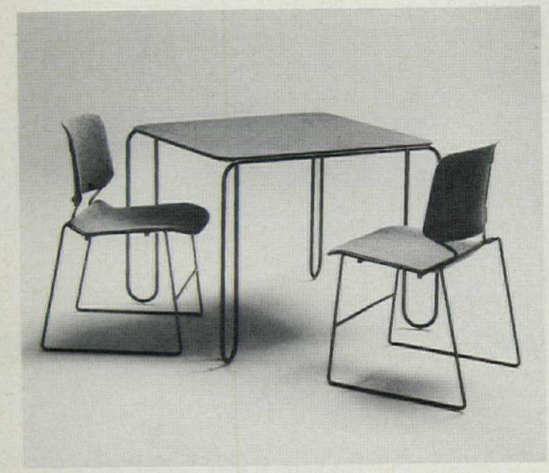
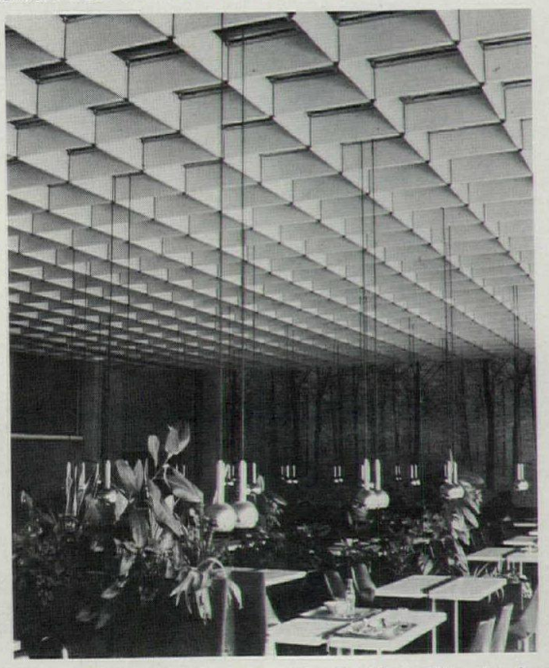
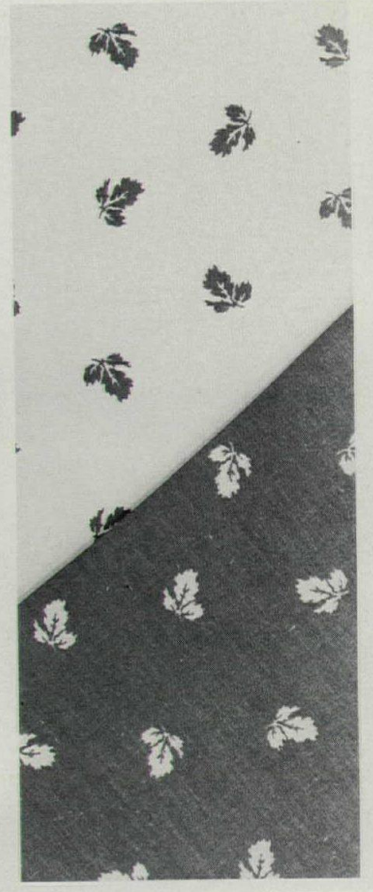


Krueger: *Matrix Tables, companions to Matrix Stack Chairs, have Formica or hardwood veneer tops and tubular steel legs finished in bright chrome or powder coating.*
Circle 117 on reader service card

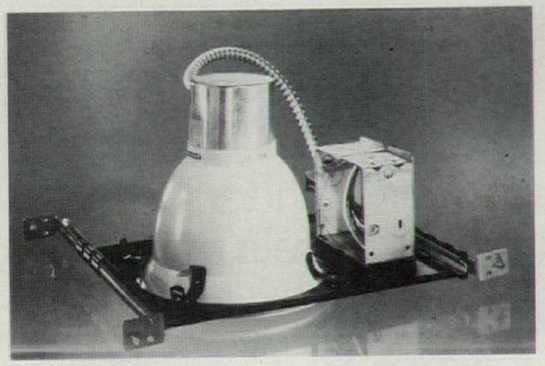


Levolor Lorentzen: *Daempa Baffle ceiling is offered in more than 100 colors and bright metallic finishes. Custom panels range from 2 to 10 ft in length.*
Circle 119 on reader service card



La France Imports: *La Nature collection of fabrics includes Autumn Leaves in white on rust or rust on white in 100 percent cotton. Coordinated wallcovering is also available.*
Circle 118 on reader service card

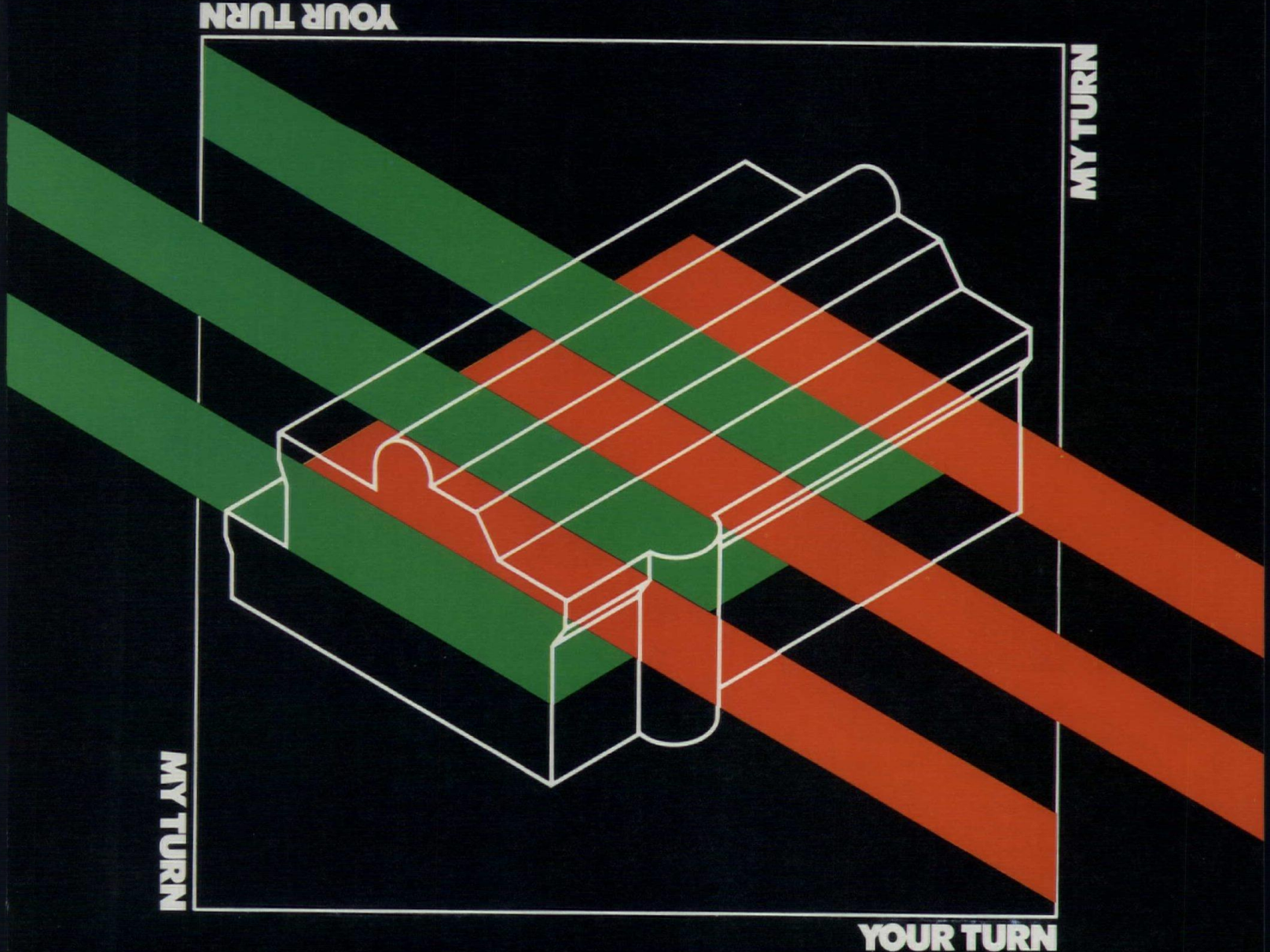
Nanik: *Serré Wood Verticals come in 23 standard stains and are custom cut from solid vanes in 3½-in. or 5-in. widths. Also available is a parquet wood vertical.*
Circle 122 on reader service card



Lightolier: *Zoll Series downlighting has seven reflector trims and a Frame-In-Kit for new or existing ceilings, providing up to 50 percent saving in installation time.*
Circle 120 on reader service card

[Continued on page 62]

INTERNATIONAL DESIGN SYMPOSIUM MARCH 21 1981



WESTWEEK
MARCH 20 21 22
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LOS ANGELES
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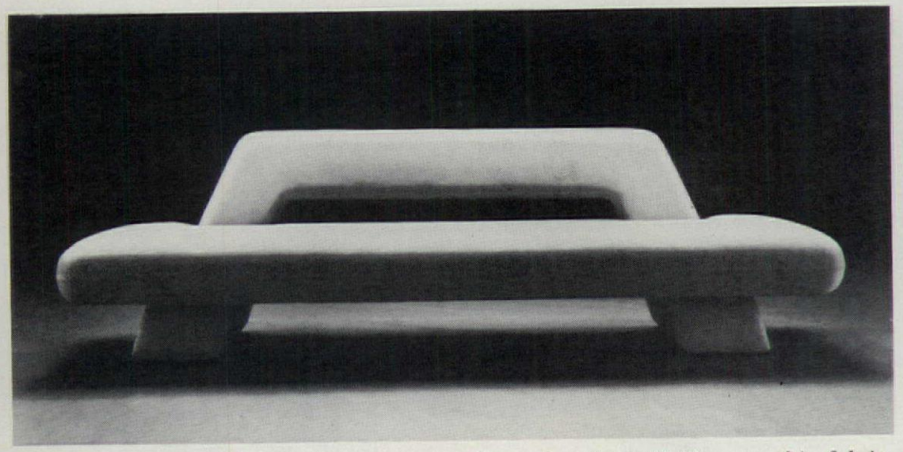
DESIGN: BILL TOM, ROD DYER, INC.

WEST WEEK '81



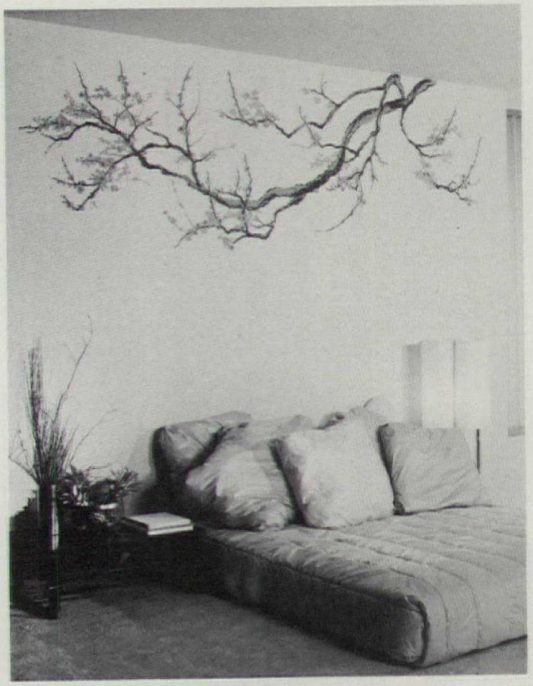
Harvey Probber: *Mayan sofa, a sculpture for seating, is available covered in fabric or leather.*
Circle 123 on reader service card

Sunar: *Lounge chair from the Petitt collection is upholstered in leather or fabric over molded polyurethane foam on a steel frame. Base is die-cast zinc with chrome finish.*
Circle 127 on reader service card

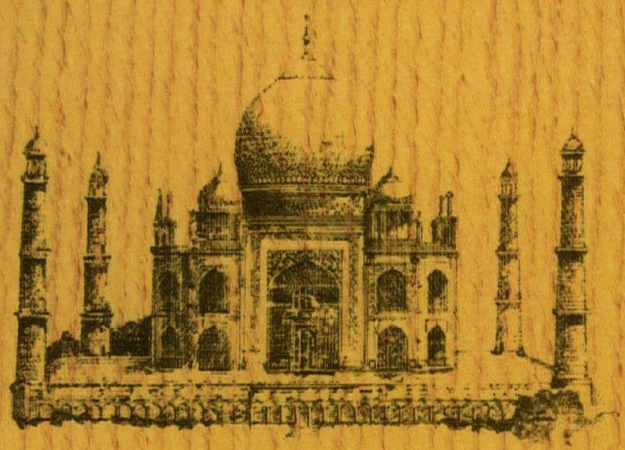
Shelby Williams: *Stacking chair 5397 has foam-padded seat and square metal tubing frame finished in bright chrome or polished brass.*
Circle 125 on reader service card

Stendig: *Piediferro Series-S tables, designed by Afra and Tobia Scarpa, come in three heights. Tops are square, round, or oval made of marbles, plastic laminates, or box-grained natural oak for square tables only. Base is cast iron finished in dark gray.*
Circle 126 on reader service card

Reed Wallcoverings: *Seascapes collection of wallcoverings includes Sea Coral, a fanlike design in russet by Cindi Mufson. There are coordinated fabrics.*
Circle 124 on reader service card



Albert Van Luit: *Spring Bough wallcovering is a four-panel scenic design of a flowering peach bough.*
Circle 128 on reader service card



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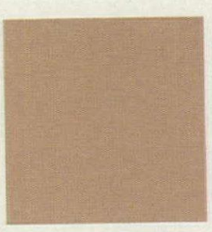
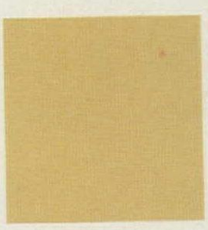
When You're Looking for the Perfect Solid Color...

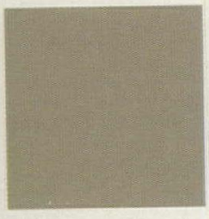
During 1980 . . .

Wilsonart asked Designers

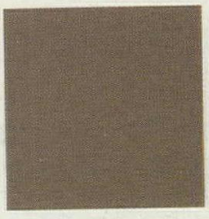


all over the U.S.



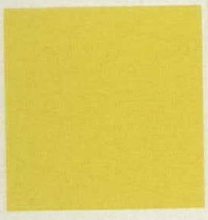


what a good,



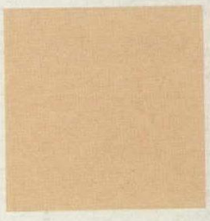
contemporary decorative laminate

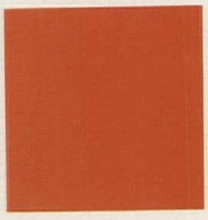
solid color line



should look like.

You talked. We listened.





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Circle **No. 375** on Reader Service Card

2x2

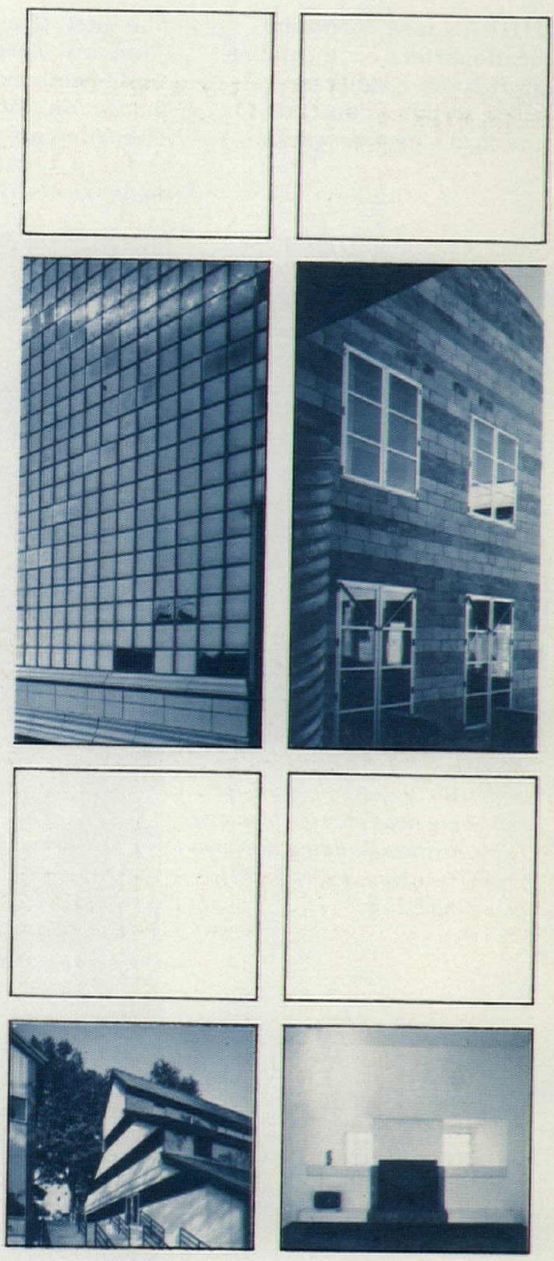
Two buildings each, by two firms, yield four vivid demonstrations of current architectural potentialities in America.

Imagery, procession, typology, allusion, ornament, response to context—all of the major issues that divide orthodox Modern architecture from today's no-longer-so-avant-garde—are addressed in these four buildings by two firms. Their appearance here in one issue is largely an accident of converging completion and publication schedules (finally pulled together through the efforts of some dauntless photographers).

As it happens, these two firms represent the East Coast and the West Coast. Hardy, Holzman, Pfeiffer & Associates of New York has pursued its iconoclastic design path so long—and produced so many excellent buildings along the way—that they have been named this year's recipient of the AIA Firm Award. Although Studio Works of California has been recognized for outstanding design for over a decade—winning P/A First Awards in 1969, 1972, and other awards in 1972 and 1976—these two buildings are the first they have executed from the ground up. Like HHPA, Works is a true collaboration among partners—the senior ones being Craig Hodgetts and Robert Mangurian.

Besides their adventurous manipulation of forms, images, and colors, buildings by these two firms exhibit a shared concern for the real materials of building. Their designs are not just paper conceptions somehow made real, but are determined in significant part by the components at hand in this industrialized society—their physical and evocative characteristics deliberately made prominent. (For more on materials in design, see Editorial, p. 9.) While HHPA's work expresses an enthusiasm mainly for the hardware of Middle American life (though the partners' cultural interests are far broader), Studio Works reflects a wider range of sources, particularly recent European design explorations and the urban vernacular that inspired them.

The four buildings shown here—also coincidentally—cover a wide range of uses: neighborhood settlement house, corporate headquarters, academic facility, gallery combined with residence. One by each firm is meant to be highly visible and symbolic—though nonetheless quite cognizant of context; the other in each case is meant to fit in unobtrusively among its neighbors. All of them succeed. And all of them do more than that: they show us today's unrestrictive, eclectic architectural climate can foster rich architectural experiences—in working, workable buildings. [John Morris Dixon]

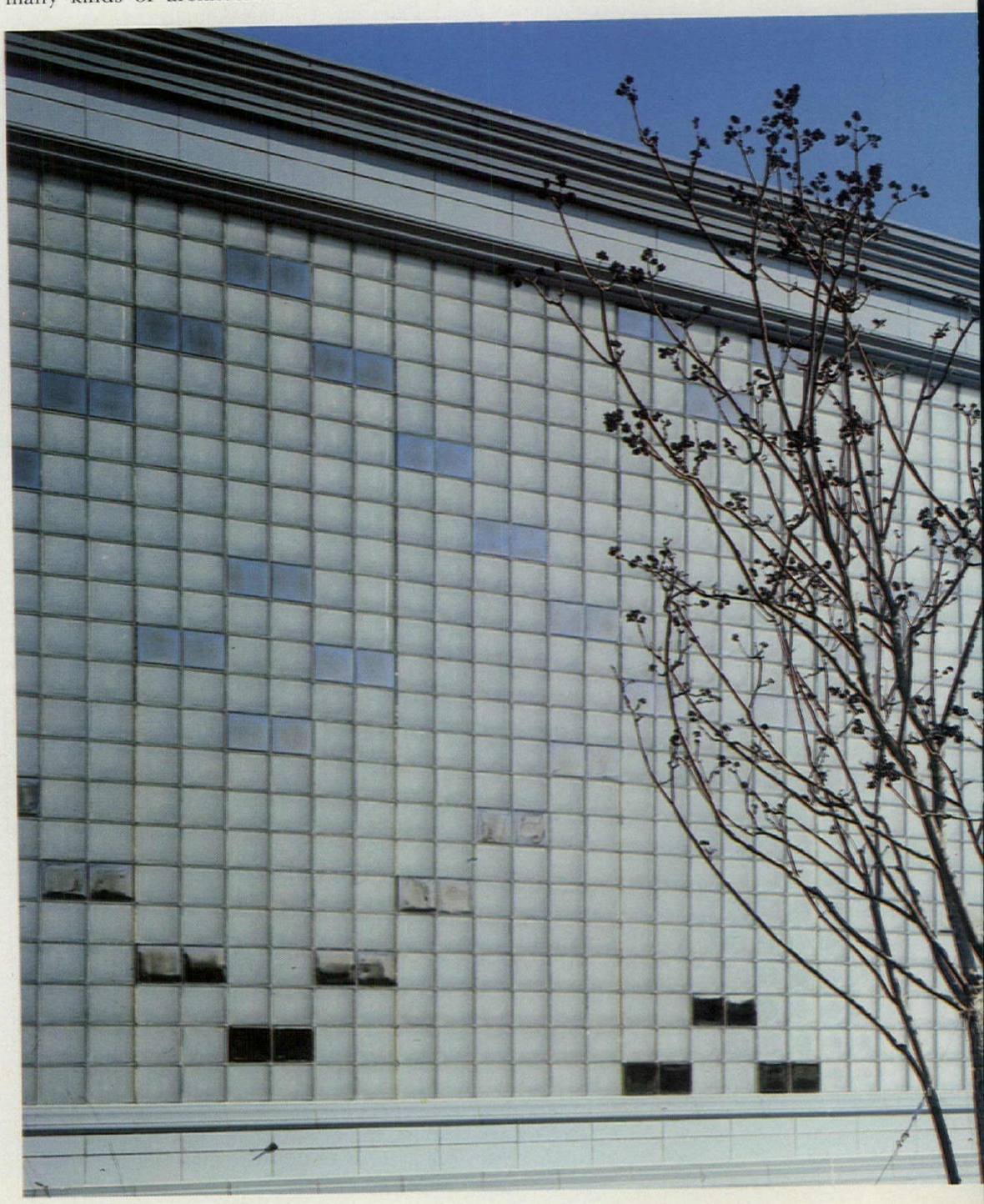


Best Products Company, Richmond, Va

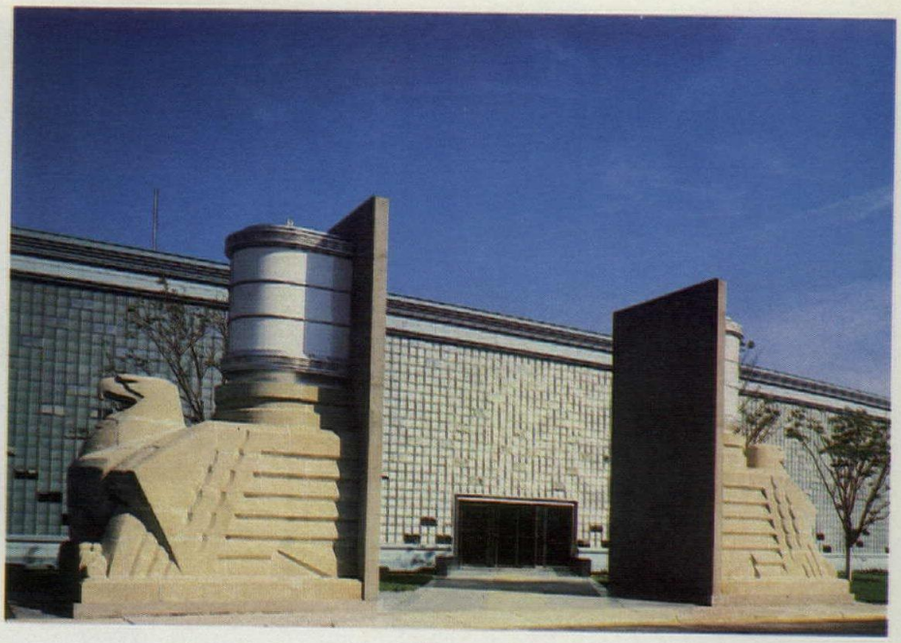
Best bets

HHPA's new corporate headquarters for a catalog-showroom retailer reveals some striking contrasts to the firm's earlier works.

The first phase of the new Best Products Company corporate headquarters has recently been completed near a highway interchange on the outskirts of Richmond, Va. The company has long been well known for its unusual catalog showrooms that employ many kinds of architectural and structural devices to entice and delight the retail buyer. With this new building, no such tactics are used, yet it is as unusual for its type as are the earlier showrooms. Following six pages of photographs, descriptive captions, and drawings, the building is then discussed in greater detail on pages 84–85.

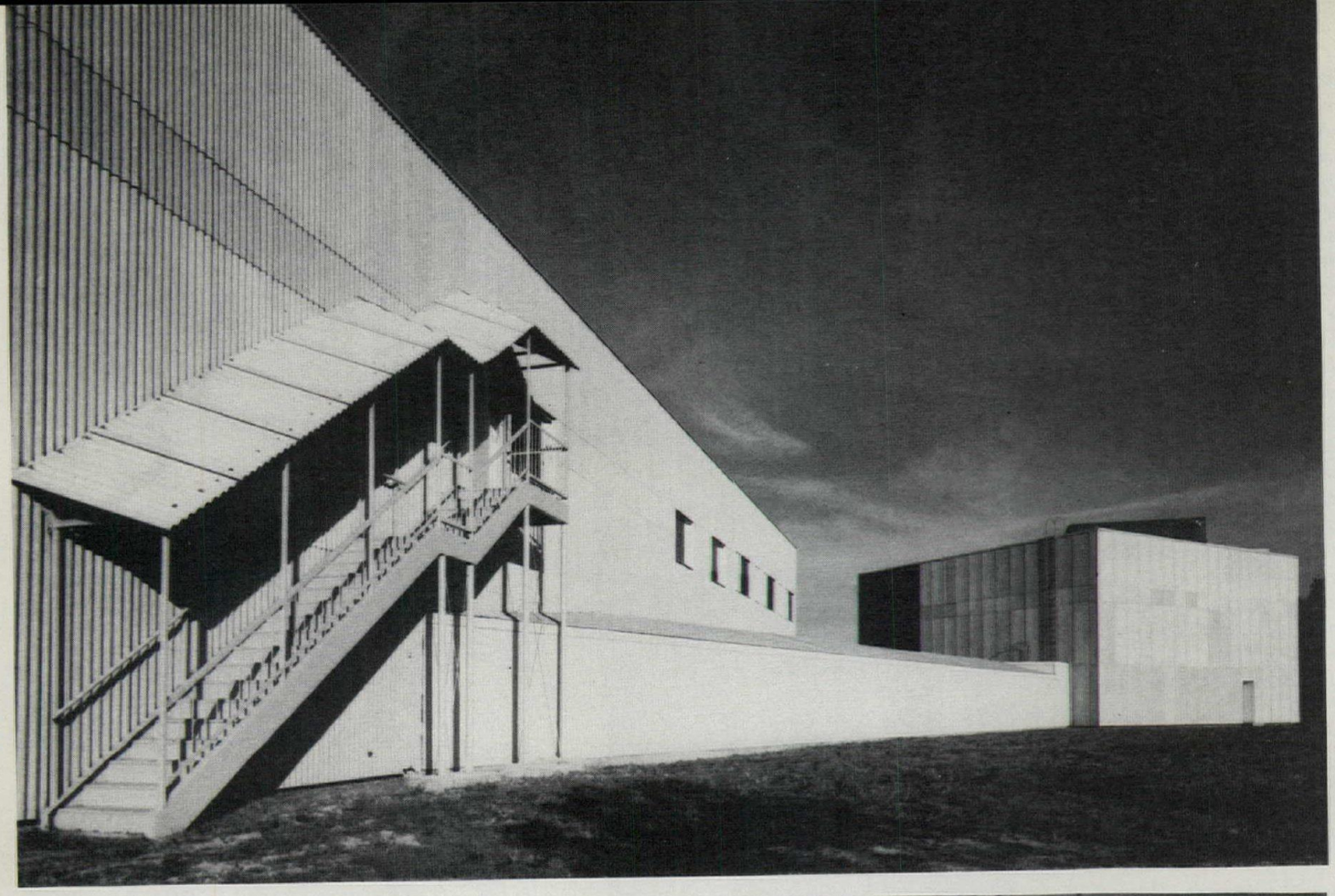


More than any of HHPA's past buildings, this one is full of architectural historical allusion, with a corresponding downplaying of the usual emphasis on the high-tech aspects of structure and systems. The curving front façade is finished at the top with a glazed terra-cotta cornice and detailed around the base with a terra-cotta and ceramic tile watercourse. Spouting fountains reminiscent of those of the Italian Renaissance fill the moat, while the façade of transparent and translucent glass block rising above it is patterned in a 16th-Century Venetian manner. The massive WPA-era eagle sculptures with lanterns flanking the entry once stood atop the Moderne 1939 Airlines Building in New York (P/A, Nov. 1978, p. 24), now demolished.



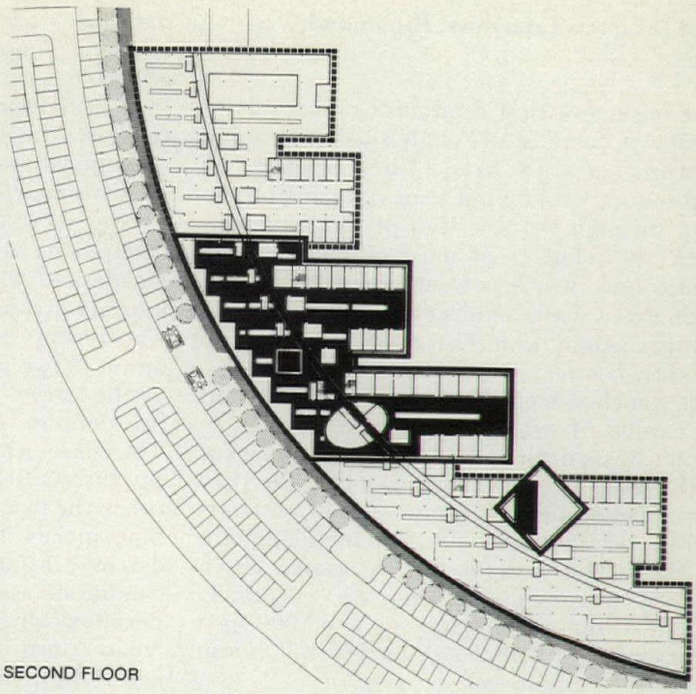
Best Products Company, Richmond, Va

Once past the eagles and over the bridge, one enters the spacious lobby (right, left, below left), where the second-floor open-plan offices are treated as a mezzanine surrounding the upper reaches of the space. The open offices are given a feeling of intimacy and warmth by the use of such devices as the small-scaled Colonial "houses" that are used as major dividers, as well as the carpeting, which is designed after a silk-screen of 1977 by artist Jack Beal. Adding to the touch is the floor of the curving walkway (far left and below), where the tile and its pattern remind one of that found in turn-of-the-century office buildings and cafes. Throughout much of the space, the translucent glass block admits a soft, even light that is most complimentary to the well-placed art works.

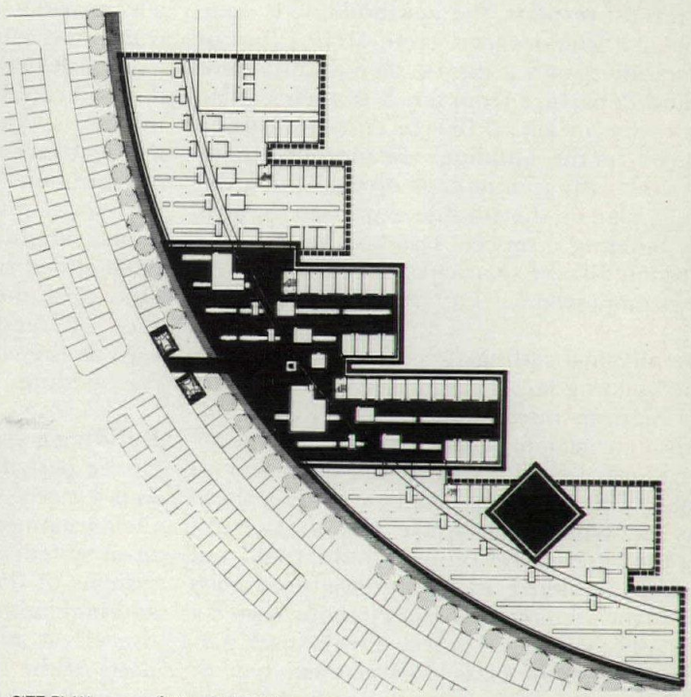


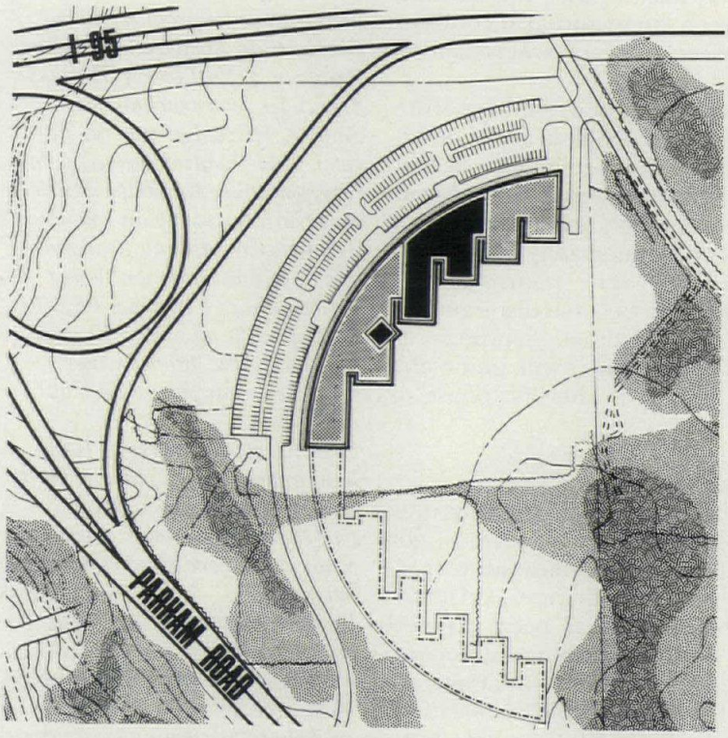

PAIG

Eventual additions will be joined to the north and south sides of the building, making it one day a two-story semicircular complex (see plans and site plan). For now, however, the sides are enclosed simply with cement-mineral fiberboard panels. The south façade (left) would look like the back of any small-town movie theater were it not for its length and the auditorium adjoining it in the background. Although the use of art has been effectively discreet throughout most of the building, there are places, such as some of the executive offices (below left) that seem to be in need of a little discipline; Arts and Crafts, Art Noveau, Pop Art, and Pompeii defeat each other in the same small space. To explain its architectural antecedents and historical allusions, the company distributes a flyer that enlightens the uninitiated about everything, including the connections from the 14th Century to our own.



SECOND FLOOR





SITE PLAN ↑ N ⊢⊣ 20'/6m

Best Products Company, Richmond, Va

The owners of Best Products Company have by now become firmly established as genuine patrons of the arts. The Lewises of Richmond, Va, first put their company on the map through the selection of SITE of New York as architects of most of their catalog showrooms, which now make up the largest such retail merchandising business in the country. Along with this, the clients have also recently completed a new showroom by Venturi, Rauch & Scott Brown, and they have had an exhibit of proposals for their new showrooms by six distinguished young architects at MOMA (P/A, Feb. 1980, p. 24). Now they have opened the first phase of their new corporate headquarters building in Richmond, by Hardy Holzman Pfeiffer Associates. When all the proposed portions are eventually added to the present two-story, 68,000-sq-ft structure, the completed facility will house 3000–4000 employees.

In most respects, the new building is quite what one would expect from HHPA, but in some other ways it can be seen as an almost radical departure from much of their earlier work. Specifically, different attitudes can be noticed in the building's relationship to its physical setting, in its type of organizing device in plan, in the attitude expressed towards the building's service systems, and in the selection of the particular historical references employed.

The physical setting

The building faces one quadrant of a cloverleaf highway interchange outside Richmond. Although blatant contextualism has never been one of HHPA's vices, and there was no real excuse for them to pursue it here, there was one eminently sensible reason. By curving the building to conform to the road, and then by building its street façade of glass block, the architects have in fact constructed a most efficient sound barrier for the back gardens. Inside, the glass block acts as a type of shoji screen to give soft natural illumination to the offices, which are visually oriented to the planted gardens and meadows behind the building. The façade also assures a strong image at the front, but this, of course, could have been achieved by a number of other means.

The plan

Many of HHPA's earlier building plans have made use of the concept of grids in shifted or "cocked" relation to each other. Combinations of the buildings' other systems, such as furniture, partitioning, or mechanical and electrical equipment, would then rigorously adhere to one or the other of the grids, and thus also function as clarifying devices. In contrast, the Best plan shows only a single orthogonal system (albeit with canted or rotated room "objects" dropped into it), which derives most of its richness and complexity through its juncture with the curving front façade and with the main corridor that follows its arc for the length of the building. This sets up essentially the same type of condition as two shifted grids, but here, because of the curve, the relationships between the two defining geometries are never constant. The curve, which is the element that continually throws off a permanent relationship between the two, is also clearly the main element that makes this building so much more dynamic inside than many of the others. This condition, which adds to the complexity, paradoxically makes the building easier to "read" once one is inside, since the shifting relationship between curve and grid continually provides a clear sense of where one is within the matrix.

This device works well now, but one wonders if it could become a problem as the building grows. Without the built-in limits inherent in the conventional orthogonal shifted-grid organization, this system, extended much beyond its present (immediately graspable) limits, might by the very nature of its open-ended continuum become disorienting. One presumes, though, that "landmarks," such as freestanding rooms, will guide the way, as they do already in the first phase of the building.

Building's systems

In the past, HHPA's buildings have become well known, even somewhat notorious, for their treatment of the mechanical and structural systems. To varying degrees, different systems of the buildings have been exposed and highlighted both for purposes of decorative effect and as a means to illuminate aspects of the building's physical organization. At the Best building, such services have been downplayed. Where electrical apparatus or air ducts have been exposed, or where partitioning has been colored, the tones have been kept soft and muted. The strongest color, which is used for the furniture partitioning system, is a deep but calm Colonial blue-green. "As time goes on," Malcolm Holzman said, "we realize we can do the same things we used to do but with much greater subtlety." Even though treated in a subtler manner than in the past, these systems nevertheless retain their explicative function.

Historical references

This building, probably more than any ever designed by HHPA, is full of a wide range of historical references. In the past, whenever such allusions were made, they were never given particular emphasis, but were brought along in the baggage of "inclusivism" into which the "bad boys of architecture" put a lot of things to delight and sometimes shock. If anything was given preeminence, it was the

Data

Project: *Best Products Corporate Headquarters, Richmond, Va.*

Architects: *Hardy Holzman Pfeiffer Associates; partner in charge, Malcolm Holzman; project manager, Alec Gibson/Associate; team architects, Neil Dixon, Kala Somvanshi, James Despirito, John Lowery, Dorothy Alexander; construction coordinator, Hilda Lowenberg; interiors, Leah Madrid; project field representative, Randolph Hicks.*

Program: *master plan and design for new corporate headquarters to be built over multi-year period. Phase I includes 68,000 sq ft of building with 300 parking spaces and property improvements for future development.*

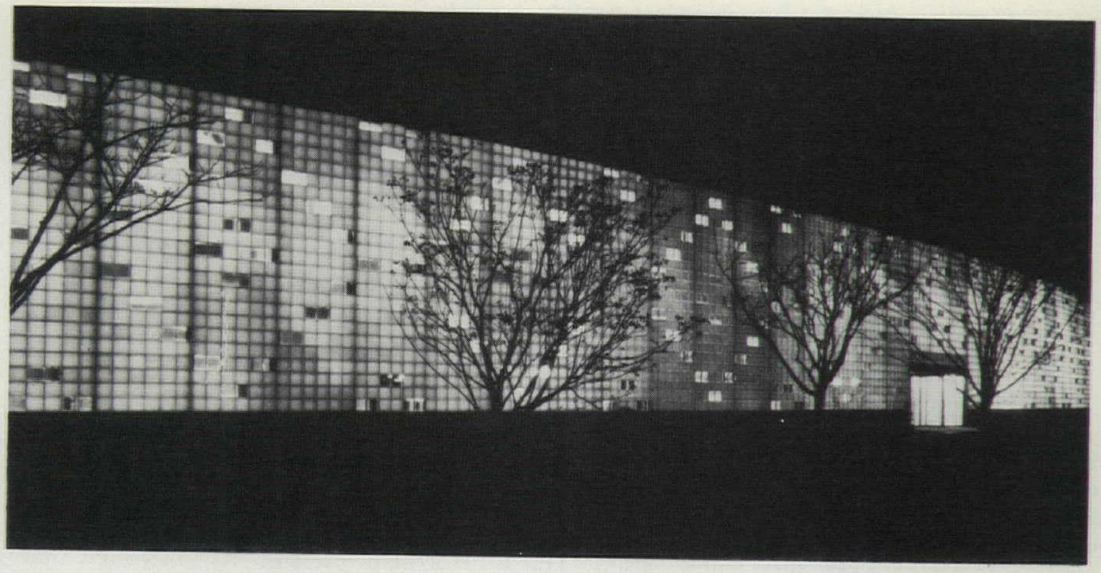
Site: *twenty-five acres of farmland and woods on plateau 30 ft above an interstate highway intersection and a major arterial road; eight wooded acres will be left natural.*

Structural system: *a simple one-way concrete-slab system employing fiberglass framework. Where the 24' x 24' structural grid abuts the curving skin, varying plan spaces are generated.*

Major materials: *curving exterior of glazed terra-cotta base and cornice with glass-block infill stabilized by 28-ft-high steel bar joists. Watercourse is ceramic tile and terra cotta. Other exterior walls are sheathed in ½-in.-thick cement-mineral fiberboard panels supported by aluminum clips on steel stud system. Interior wall surfaces include gypsum wallboard, cedar boards, aluminum, fabric, vinyl, and glass; floor surfaces include stone, ceramic tile, and carpet.*

Mechanical systems: *conform to*

For some viewers, the Best building is at its best at night when the interior light shines through the glass block, making the luminous structure seem weightless and barely perched upon the ground.



requirements of 1978 BOCA Energy Code. Air conditioning utilizes four zones; when outdoor temperature is below 55 F, up to 100 percent ventilation cycle is used; lighting includes translucent skylights, energy-efficient ballasts on fluorescent lighting systems, and light distribution luminaires.
Consultants: *LeMessurier Associates/SCI, structural; Sippican Consultants International, Inc., civil; Lehr Associates, mechanical/site utilities; Schnabel Engineering Associates, Inc., geotechnical; Luis Villa/Lois Sherr Associates, landscape; HHPA, interiors; Jules Fisher & Paul Marantz, Inc., lighting design; Robert A. Hansen Associates.*
Construction manager: *McDonough Construction Co.*
Client: *Best Products Company, Richmond, Va.*
Costs: *not released by client.*
Photos: *Norman McGrath.*

industrial materials used in the buildings, or other materials used in unusual ways, which drew one's attention to them and perhaps made one see them in new light. What distinguishes the Best building from other HHPA works is that here one is not as aware of the materials per se as of their formal effect, which in most cases throughout the building is historicist in nature. The effect, however, is not just of historicism, but almost always alludes directly and exclusively to the concerns of art and architecture. In this building, such an attitude can certainly be seen as perfectly natural, since one of the primary requirements of the corporate headquarters was that it also house part of the client's large art collection.

The partitioning system in the open-plan parts of the office floors is composed of a system of small, linear Colonial "houses," neatly fitted out with desks and task lighting, and with traditional architectural cornices finishing off the top. Besides their allusive quality, however, these dividers also show a particularly successful way of humanizing large, open-plan office space by breaking it down into human-scaled architectural elements. Something else that humanizes the space, of course, is the art and other decorative objects found throughout the building. One of the best things about the art in this building, besides its overall high quality, is that a currently common tendency of including too many objects has been assiduously avoided. With the exception of some executive offices, one feels that the art has been selected and installed with a very careful eye.

The glory of this building, though, and where it differs most from other HHPA works, is on the exterior. It is unlike anything the architects have done before, and even in its present, early state of growth, it could almost be seen as revolutionary in terms of its type. It makes none of the grandiose, sometimes outlandish kinds of corporate-image statements that business executives often seem to favor. Instead, it is serene and quiet, but in its own way makes a most powerful and evocative architectural statement. It could appear as a silent fortress from some past memory were it not for the fact that the entire front façade is constructed in patterned clear and reflective glass block. In front of this, massive WPA-era stone eagles flank a bridge that leads over the moat to the entrance.

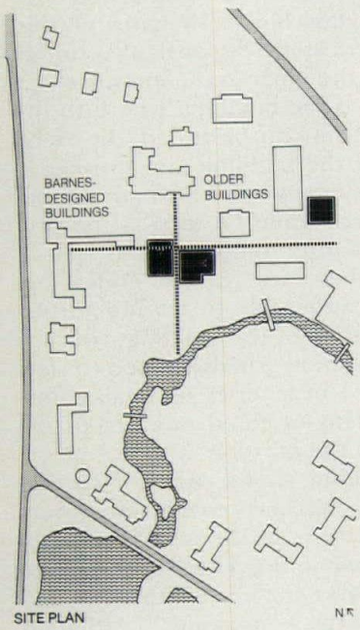
At the sides of the building, where future additions will eventually be added, the architects simply cut the building and finished it off like the back of any small-town movie theater. This gesture could be seen as too precious, but in its utter simplicity and lack of contrivance it becomes instead endearing, and above all, admirable in its straightforwardness. The back of the building, which is clad with composition panels clipped to steel studs, is finished in a series of small courtyards and gardens oriented away from the highway toward the meadows.

What this building shows, primarily, is that there are some things corporate headquarters buildings, even those in the beautiful countryside, don't have to do. They don't have to beat the public over the head with tacky and contrived corporate "imaging." Although that is not to say this building does not have an image; it does, but it relates only to matters of building, architecture, and its history. Another lesson shown here is that corporate offices do not have to make use of open planning in conventional ways, but that imaginative applications of factory-manufactured office systems are possible. And finally, they don't have to cover their walls with art or other decoration, as is often the case, for it to have its proper effect, which is the enrichment of the space it is in, and ultimately of those who share that space.
[David Morton]

Dance Studio and Music Performance Hall, St. Paul's School, Concord, NH

Raising the roof

HHPA's new music and dance facility for a New England prep school indicates yet another striking contrast to earlier work, this time in a conservative vein.



SITE PLAN

Every architectural firm whose work attracts a lot of attention sooner or later finds that forthcoming publicity, commissions, and awards depend on the firm's ability to "renew" itself. Hardy Holzman Pfeiffer Associates, the *enfants terribles* of architecture in the late 1960s and soon after officially admitted into the establishment (*New York Times Magazine* profile, 1977; National Institute of Arts and Letters Brunner Award, 1975), still receives a lot of attention. It still elicits enthusiastic reviews, obtains juicy commissions, and cops prestigious awards (AIA firm Award 1981). But for a few years now some spectators have been watching "the kids" with increasing doubt that they will be able to "renew" themselves. How long will a public think that Butler buildings bashing into each other, exuberantly painted ducts barreling through space, and fluorescent light eerily illuminating a pulsating floral carpet laid on the diagonal are avant-garde? Already HHPA's trademarks have been lifted by big-business architects trying to spiff up their Miesian industrial parks with brightly painted ducts.

Not that HHPA has pretended it wanted to be avant-garde. It did, however, want to turn around accepted norms, to make certain properties, such as industrialized off-the-shelf components, an accepted vocabulary of architecture. In doing so, the firm took Modernist principles of gridded horizontal spaces and exposed structure and mechanicals and played on their industrial characteristics, jazzing them up, juxtaposing them with *outré* pop or industrial artifacts, making the whole thing accessible and, well, amusing. They took architecture a step beyond Modernism, but in retrospect only a baby step. And it may well have been towards a dead end.

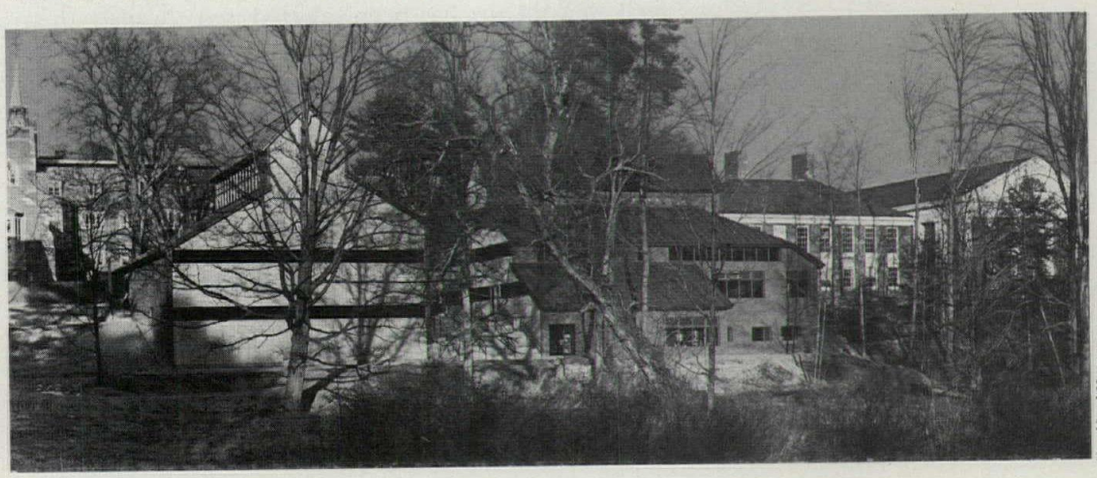
Both the Best Products Company on the preceding pages and St. Paul's Music and Dance Building still exploit the basic Modernist vocabulary. However each project hints strongly that the firm is exploring new directions, although, to be sure, different ones. Best Products pursues a flamboyant, ornamental, and historically referential course; St. Paul's attempts to follow a more conservative line, turning back to vernacular building forms and materials of the past.

Contextual impulses

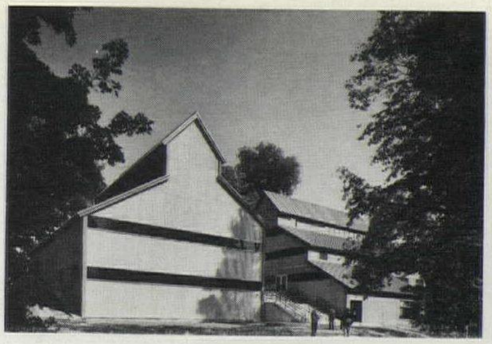
Many of the buildings on this secondary school campus, gradually built since 1856, come in standard brick collegiate Gothic. When Edward Larrabee Barnes designed a complex of dormitories in 1962, he made certain interesting gestures: during the heyday of Modernism, with its flat roofs and floating glass window walls, Barnes gave his brick buildings gable-like roofs of oiled copper and square windows rotated on a 45-degree angle. HHPA's siting of its building on the slope alongside Barnes's dorms and at the rear of the main school building meant all three styles should be kept unified visually.

The most noticeable feature of the building is that it comes in two parts—the music building and dance hall—connected by an underground base containing locker rooms and rehearsal spaces. The resulting reduction of scale was further ensured by placing the two buildings at right angles to each other so that they do not read as simple, repetitive units. Layering the roofs, and inserting the two structures into the slope of the hill also helped.

The steeple-like gable roofs, broken by clerestories and the long slung lower roofs


Bradford Herzog

Dance and music facilities are separated into two distinct buildings linked by a common underground floor to form essentially one structure. The discrete massing and stepped-gable roofs contextually respond to the older brick Gothic architecture of the school, as well as the newer brick buildings by Edward Larrabee Barnes in close proximity to the structure. The 40-ft-high dance hall (opposite) receives natural illumination from the clerestory windows of the steeple-like roof (opposite, right top).



Courtesy HHPA

echo the Gothic-style massing of the surrounding buildings with a muteness reminiscent of vernacular schools and churches. The roof shape, which dominates the silhouette, harks back to a vernacular tradition increasingly being investigated by architects in America as well as Europe.

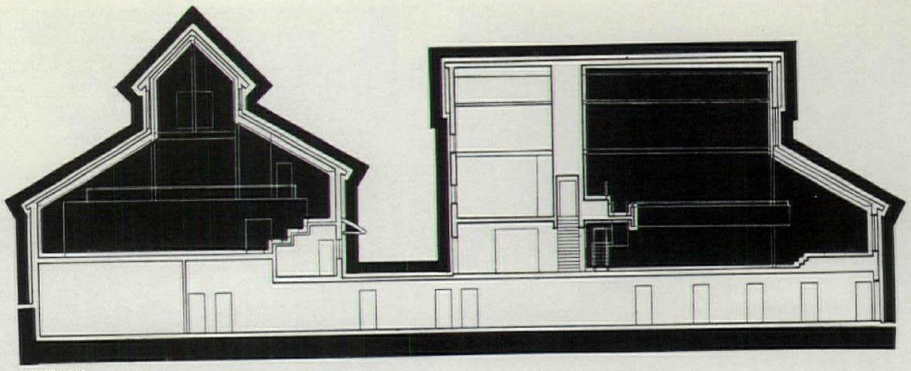
HHPA has handled the interiors of the Dance and Music Building with restraint and favored a tailored crispness of detailing. While the ducts, pipes, joists, and framing members are still revealed, and industrial elements are easily visible, their presence is toned down. Straightforward interior volumes correspond legibly to the building's external configuration. The major spaces in each structure are fairly contained, with an emphasis—particularly in the music room—on the vertical centralized thrust of space upward to the gable roof and the clerestories.

In the nature of materials

The quietly composed character of the building lends it a dignity in spite of the down-to-earth characteristics of minimal ornament, simplified details, and inexpensive materials. The music room attains a richness of 19th-Century churches through the use of cedar paneling on walls and sloped ceiling, and the dark Victorian colors for partitions, balustrades, and framing elements. There are moments of dissonance: the mixing of elements like the incandescent sconces mounted on the cedar paneling works well with the metal stairs and steel framing, largely because of the dark Victorian palette used. But the juxtaposition of sconces over the ventilation ducts just looks flippant.

Outside, the copper panels with standing seams surfacing the roofs' broad expanses neatly match Barnes's pitched roofs. At the same time they successfully give texture and scale to the buildings with a durability evocative of slate-roofed churches and a ruggedness of 19th-Century factories. The corrugated cement asbestos panels on the end walls do not come up to that level of association, although references to New England farm buildings are not lost on the observer.

The handling of the brick, however, is another matter. There is no argument about brick being a respectable choice, since it is so generously employed in the surrounding buildings. But whereas the brick of the other buildings is treated as a load-bearing mass or as a continuous plane punctured by windows, the brick in the Dance and Music Building is applied like adhesive tape, coating residual wall surfaces between the layers of roof levels along certain sides of the building. The copper roof reads as a stronger and more substantial material than brick veneer—which it indeed is. The inversion may fit into the preference system of HHPA, but one wants to see a representation of support (brick expressed as a thickened wall), if not actual support (steel frame), under those heavy roofs.



SECTION

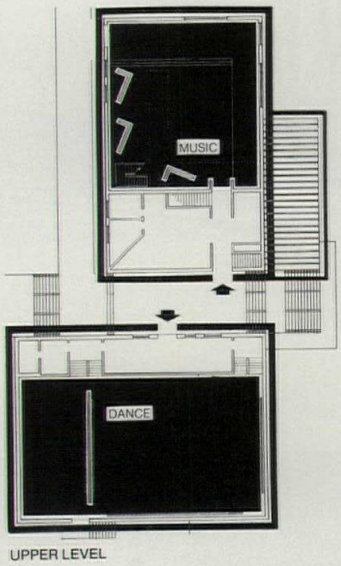
The wallpaper-like quality of the brick is more blatantly stated at the corners where it is sliced off to give way to the corrugated cement asbestos wall. Because the corrugated siding is continuous from top to bottom, except for the horizontal bands of glazing, it does read as a curtain wall—a reading that corresponds to the lightweight, brittle quality of the material. But the corrugated paneling itself would have benefited by being contrasted with a more highly developed wall treatment on the other elevations.

Going beyond Modernism

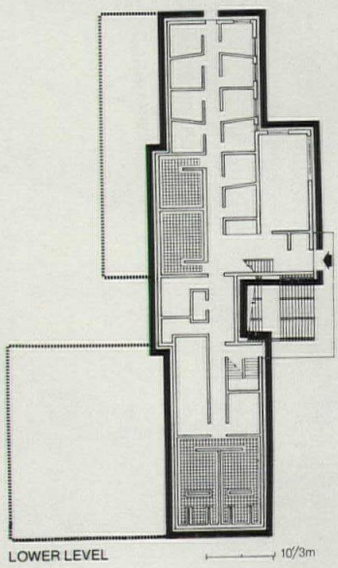
The kinds of materials and the way they are handled are problems facing many architects right now. In a period that values contextualism, ornament, and historical allusions, architects have to face existing modern technology's own demands. Obviously, present-day technologies preclude the need structurally for older "substantial" materials, many of which are prohibitively expensive anyway. But materials, techniques, and forms all compose an internal dynamic that has influenced their understanding and their appeal. Violation of that dynamic, by a shift of balance that happens when old forms are executed with new materials, warps the entire effect.

The Dance and Music Building goes far to distill certain Modernist principles (expressed structure, exposed mechanicals, curtain walls, and gridded space) and combine them with pre-Modern ones (centralized vertical space, gable-roof configuration) to see what can be extracted from these different modes. It even investigates questions of human scale through working with the massing and the texture of the building rather than by applying ornament—an instance again where current values are accommodated with Modernist measures.

This sort of consolidation between pre-Modern and Modern architectural principles, with its adherence to archetypal forms and industrial vernacular materials, may look conservative at first. But this kind of synthesis is much needed if the faults of Modernism are to be redressed, while its advantages are retained. Even if HHPA has not resolved all the issues—such as the choice and handling of materials on the exterior elevations—their exploration still represents a positive step. This statement holds true not only for their own development, but for the architecture that is still to emerge from this period. [Suzanne Stephens]



UPPER LEVEL



LOWER LEVEL 10'/3m

The brick and corrugated cement-asbestos-paneled walls, and the choice of copper roofing for the music and dance structures evoke imagery of barns and other farm buildings. In the music room (right), 38 ft in height, a Victorian color palette is introduced on the gypsum-board surfaces and steel framing. Cedar board sheathes the surfaces of the balcony, the upper ceiling, the floor, and the stage. Sconces, molding, other millwork, and even the wood Shaker-style chairs further the associations with the past. The exposed frame, ducts, metal stair, and balustrades, however, derive from the industrial vocabulary for which the architects are so well known.

Data

Project: *Dance Studio and Music Performance Hall, St. Paul's School, Concord, NH.*
Architects: *Hardy, Holzman, Pfeiffer Associates; Norman Pfeiffer, partner in charge; Harris Feinn, John Chimera, project architects; Neil Dixon, Brian Principe, team architects; Hilda Lowenberg, construction coordinator; Leah Madrid, interiors.*
Client: *John Beust, St. Paul's School.*
Site: *hillside in center of school campus at rear of main building.*
Program: *one building (in two parts), 17,024 sq ft for 200 students. Dance hall, 7652 sq ft, has locker facilities; music building, 9328 sq ft, includes ten practice units plus performance and practice hall.*
Structural system: *structural steel frame with metal deck and concrete floors; concrete block and brick infill.*
Major materials: *reinforced concrete, steel, concrete block, brick, corrugated cement asbestos panels, gray-tinted glass.*
Mechanical system: *steam-heated, ducted warm-air system with hot-water baseboard at perimeter spaces.*
Consultants: *Le Messurier Associates SCI, structural; Cosentini Associates, mechanical; Jaffe Acoustics, Inc., acoustical; Jules Fisher Associates, theatrical.*
General contractor: *Louis E. Lee Company.*
Cost: *$1 million.*
Photographs: *Norman McGrath except as noted.*

South Side Settlement, Columbus, Oh

Memory materialized

A neighborhood center designed by Studio Works is an agglomeration of evocative spaces and images, meticulously executed in tough materials.

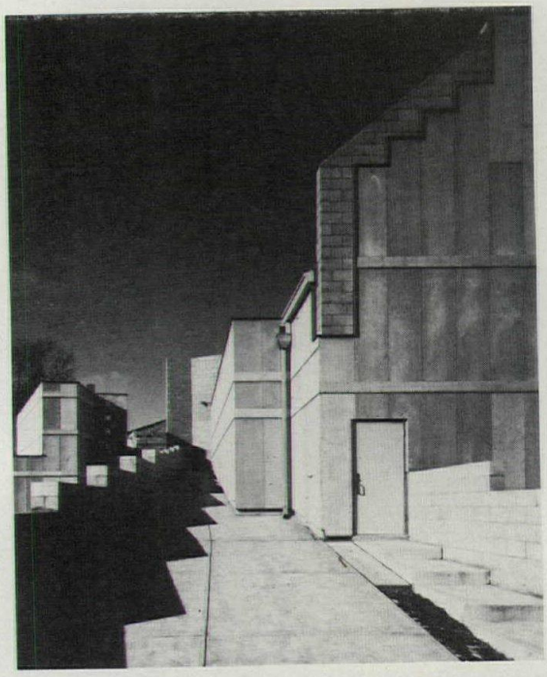
Founded at the turn of the century in a working-class area of Columbus, Oh, the South Side Settlement previously occupied a building complex it had accumulated piecemeal. In the mid-1970s, the organization began a campaign for more adequate new facilities that might also encourage revival of its neighborhood. A wide architect search led them to Studio Works, a Los Angeles firm once based in New York.

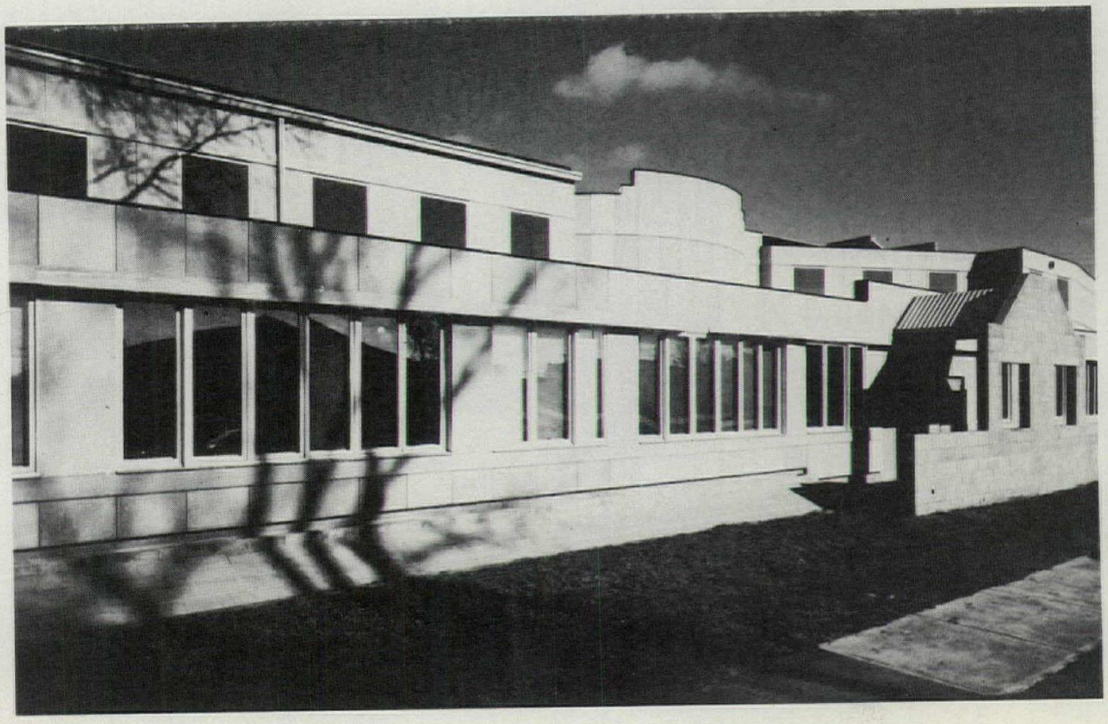
The first design that Works gave them won a P/A Award (Jan. 1976, pp. 62–63), but by the time of construction, the program had to be scaled down. The final, totally revised scheme is little larger than the earlier quarters, but carefully attuned to present and future needs.

The completed facility looks, from outside, like a cluster of structures at the scale of neighborhood houses. A more monumental, community-scaled image can be seen only from the internal court (photos opposite). Only from there can one see the classically composed "house" at the core of the complex. Wings of loftlike space flanking this core contain functions that can be reassigned as programs change. The whole is meant to be perceived as "the domain of many proprietors over time, rather than of a single contemporary one."

Materials and details are meant, literally, to survive 100 years of hard use and, figuratively, to express the original settlement ideals of hard work and integrity. Simple mechanical provisions include no air conditioning, even in the clinic portion.

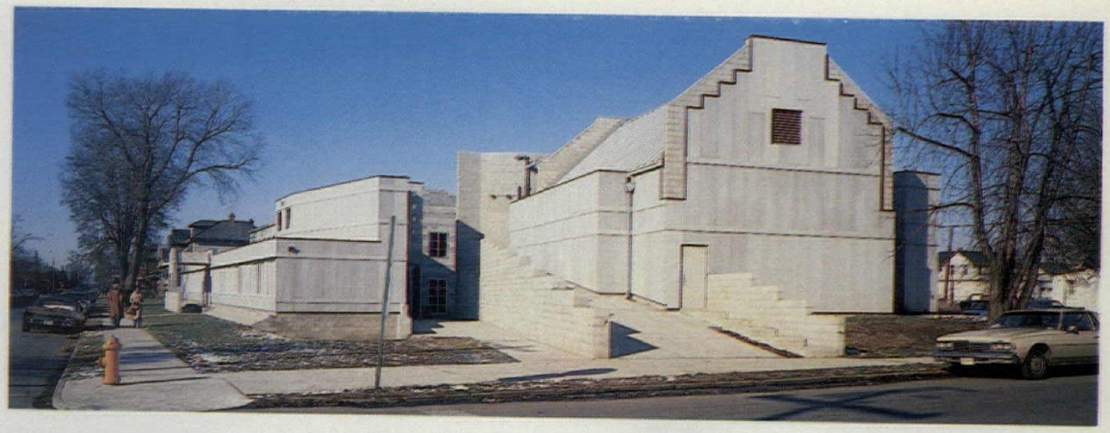
Specific features are described in captions. Design ideology, related to current European ideas, is discussed in a critique by Mark Mack (pp. 84–85). [John Morris Dixon]



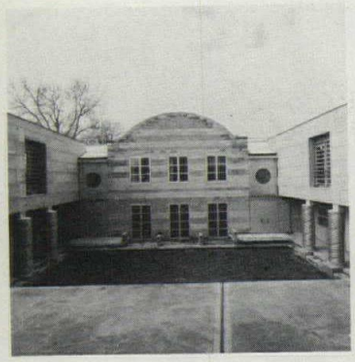


Along south front of Settlement is low clinic and office wing (right) with porch at entrance. One route to main activities is through angular gap at corner (top, opposite); flanking ground-level passage is ramp to meeting room balcony (above right).

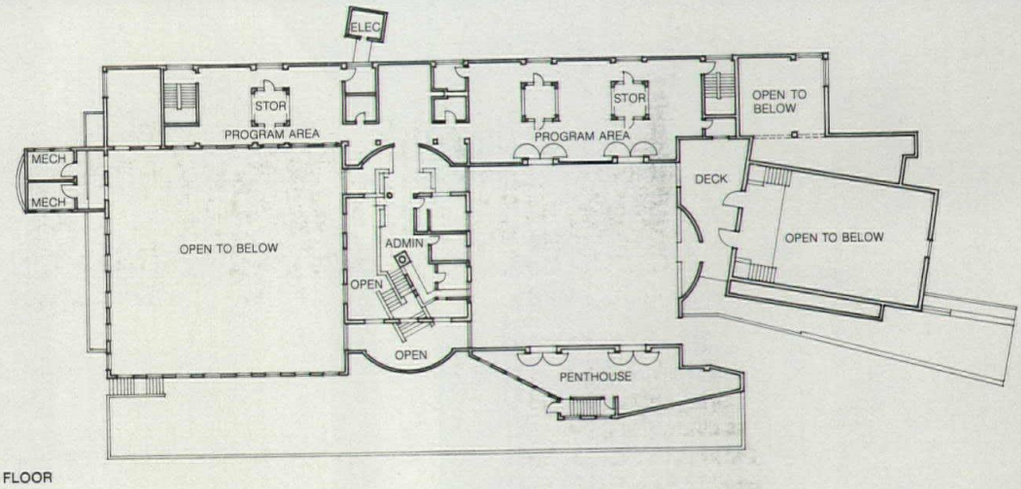
Corner view (right) shows house-scaled building forms that part at entrance to courtyard (below). Walls of filled concrete block are largely clad with cement-asbestos board over expanded polystyrene insulation. Exposed block, striped in two tones, calls out central block. Galvanized steel appears in links between core and wings and in columns of concrete-filled spiral-ribbed galvanized tube.



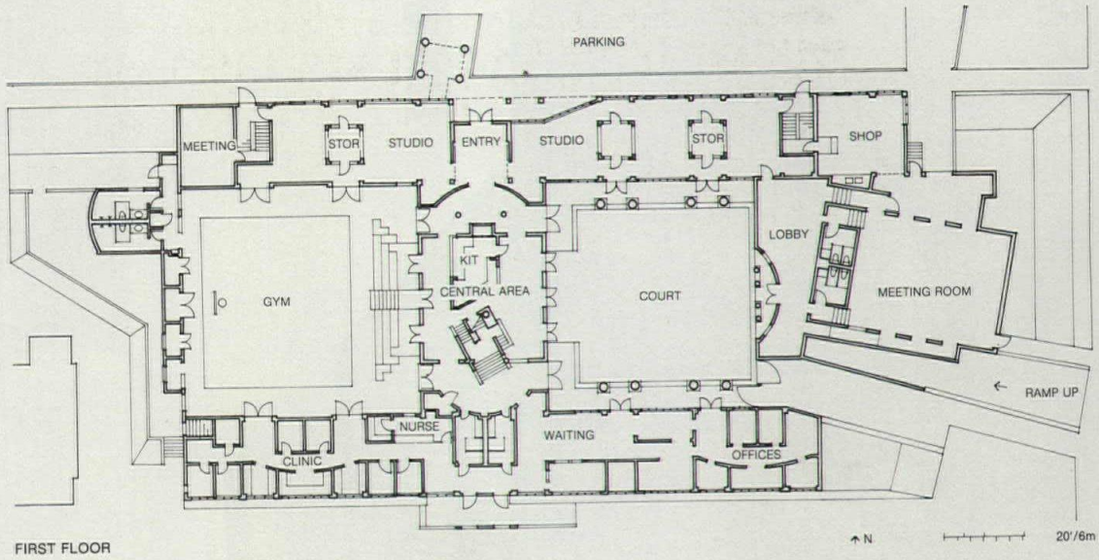
South Side Settlement, Columbus, Oh



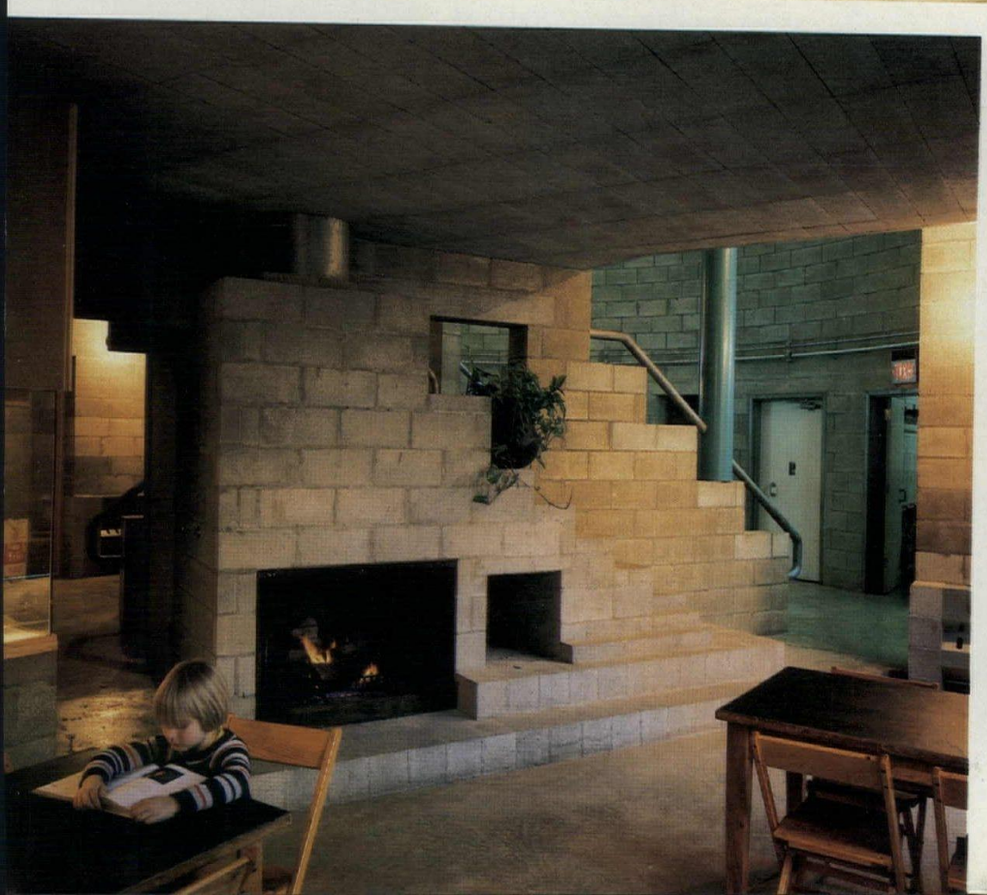
Symmetrical façade of central block (above) faces down axis of courtyard toward false front that masks silhouette of theater block (above right). Classical formality is maintained in flanking walls with balcony windows centered over paired columns. Court is to be paved, and stair designed by sculptor Alice Aycock will, if executed, lead up to balcony at theater end. Curved wall of recess there is one of three (plans below) that match curve of vault over core block. Plans show gym, central area, court, and canted theater on long axis, flanked by less specialized spaces to north and south, with entrances on cross axis. Circulation is planned for interaction, not efficiency. Gym (top, opposite) is also major gathering place. Conceived as a court, roofed with pre-engineered structure, it has grand stair-platform-bleachers, executed in particle board, at base of core façade. Central area (bottom photos, opposite) mixes circulation with activities such as eating near fireplace. This block is seen as a regular form "altered" by insertions such as angular stair, with nonconforming steel structure painted blue-green. Insulation inside block walls and applied to exterior allows block to be exposed inside; flush joints, meticulously crafted, domesticate wall surfaces.

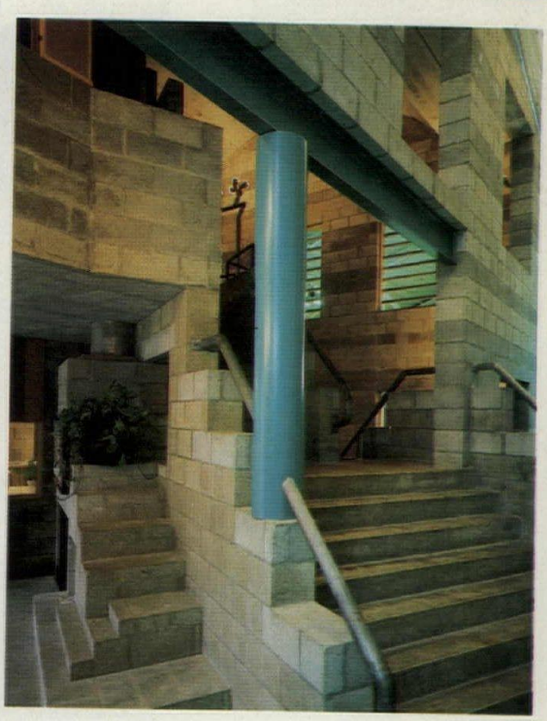


SECOND FLOOR



FIRST FLOOR





South Side Settlement, Columbus, Oh

Data

Project: *South Side Settlement, Columbus, Oh.*

Architects: *Studio Works, Venice, Ca (Robert Mangurian, Craig Hodgetts, architects, with Marianne Burkhalter, Heather Kurze, Frank Lupo, Audrey Matlock); Feinknopf, Macioce & Schappa, Columbus, associated architects.*

Site: *flat, 100' x 310', with streets on three sides, in residential area.*

Program: *diverse recreation, day-care, athletic, meeting, and medical facilities: central area, entry, offices above, 2500 sq ft; north wing loft areas for program, staff offices, work areas, 6750 sq ft; south wing loft area for clinic, 3250 sq ft; gym and showers, 4250 sq ft; performing/meeting space, 2250 sq ft; penthouse children's art gallery, 1000 sq ft; shop, 800 sq ft; electrical/mechanical, 300 sq ft.*

Structural system: *concrete block bearing walls with pilasters; precast concrete beams, floor, and roof members; steel roof structures over gym (pre-engineered) and performing space (custom).*

Major materials: *exposed structural materials, concrete floors, expanded polystyrene insulation, cement asbestos board cladding, pre-engineered metal roofing, aluminum windows, poplar woodwork, particle board.*

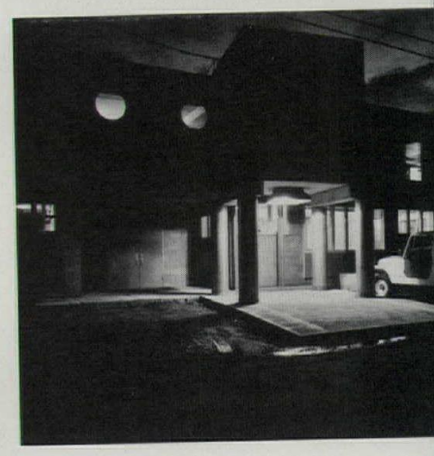
Mechanical system: *gas-fired baseboard hot-water heating for central and loft areas, hot water exchange air systems for gym and performing space.*

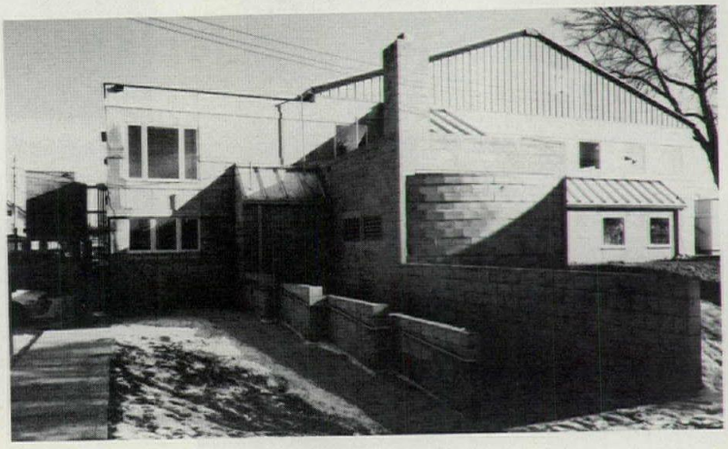
Consultants: *Kurily & Szymanski (structural), Sullivan & Associates (heating and plumbing).*

General contractor: *The Gardner Co.*

Costs: *$1,050,000 (1980, actual); $46 per sq ft (building + ½ area of courtyard); costs not including furnishings or fees.*

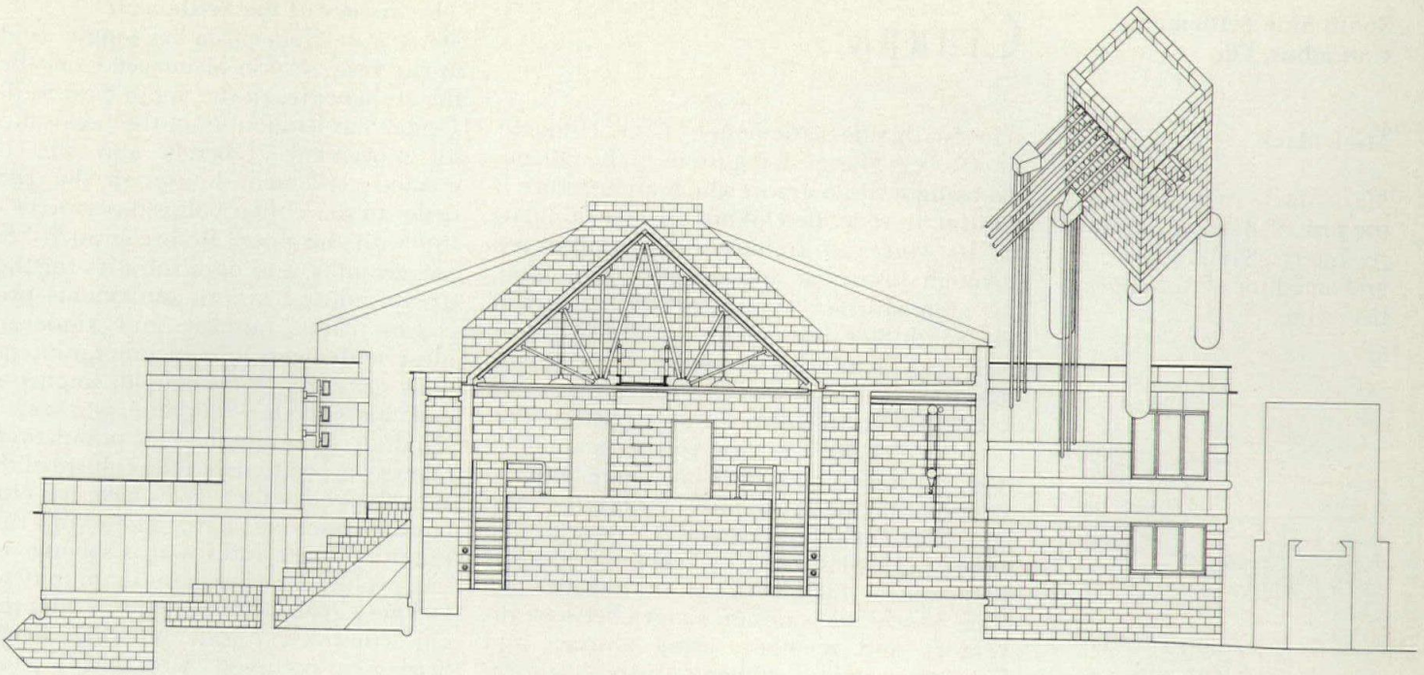
Photography: *ARTOG.*

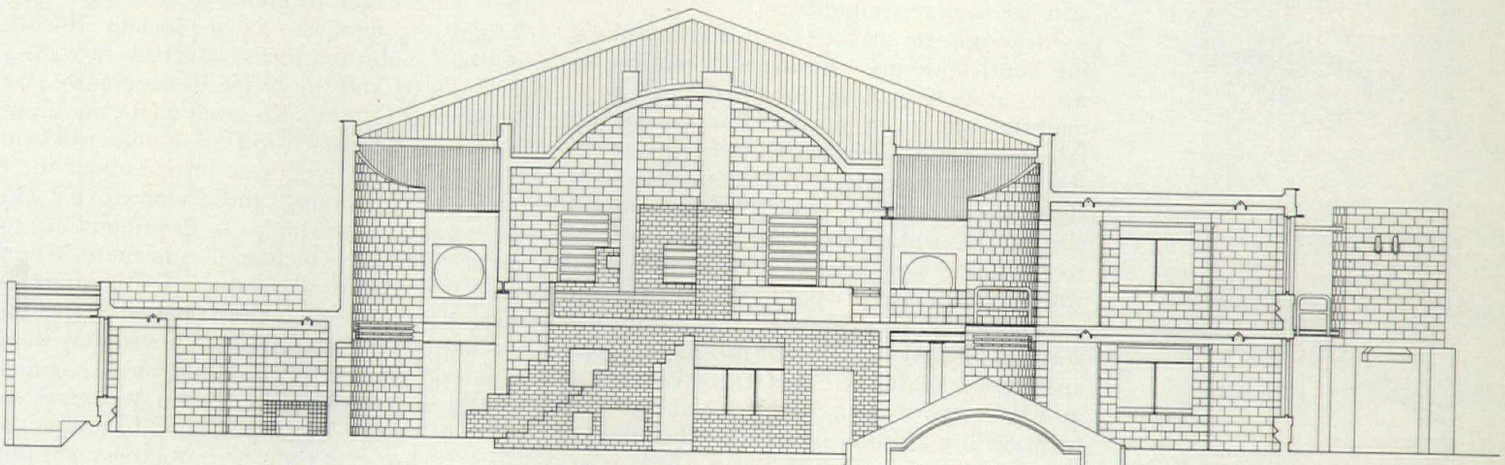


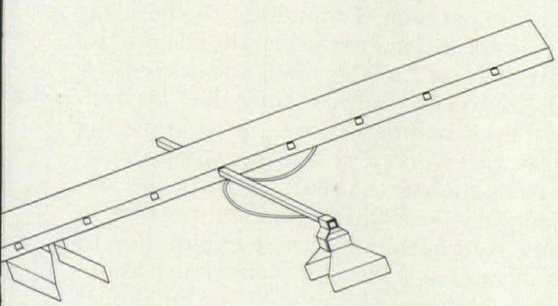


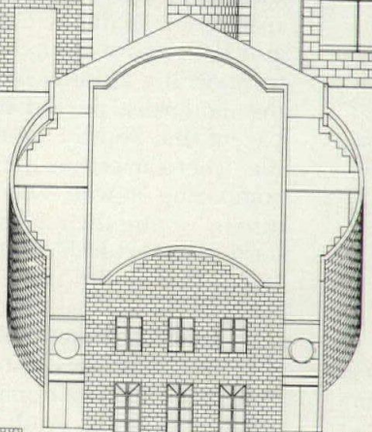
Second floor of core area (top) is designed as series of bridges and platforms, piercing bearing walls of core and leaving light wells over first-floor spaces. Typical program spaces (above left) have storage islands that open to work spaces by particle-board panels with mason's trowel handles. Simple custom light tracks can accept shielded incandescents or fluorescent tubes. View from northwest (left) shows parking side and raised electrical room that marks back entrance (above).

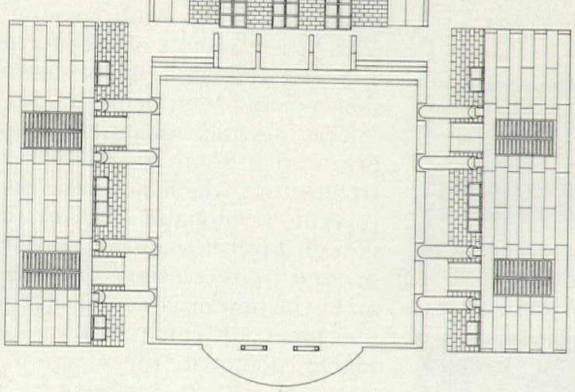
Drawings (opposite) show (top to bottom) cross section through theater, with electrical box superimposed, section at core, detail of track lighting, and elevations around courtyard.

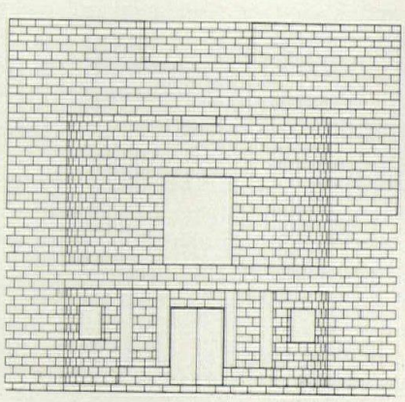










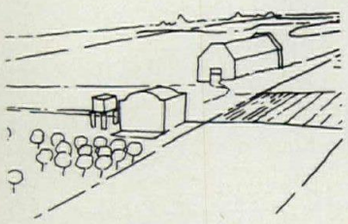


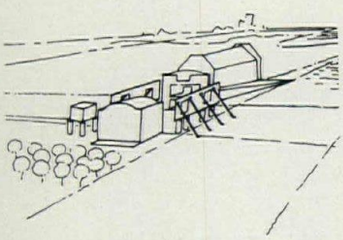
South Side Settlement, Columbus, Oh

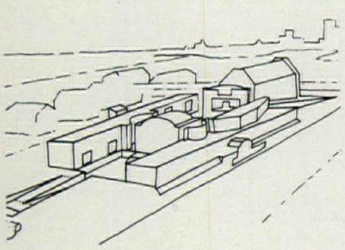
Critique

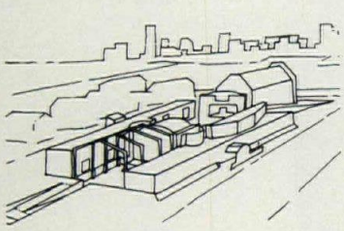
Mark Mack

Mark Mack is a principal in the firm of Batey & Mack, Architects, San Francisco, and an editor of *Archetype* magazine.









"Mythical evolution" drawings by architects show urban complex growing around two cores.

Settlement, 1909; class, 1926.

The South Side Settlement by Craig Hodgetts and Robert Mangurian glistens in the polemical twilight of an era in which architecture is constantly redefined. While certain popularity in American architecture is guaranteed through historicist and eclectic allusionism, the more abstract "analogical" architecture of the South Side Settlement has established its own popularity with its users and neighborhood.

Barbara Stovall, director of the Settlement, commented after moving to the new building: "... it feels like I have been here before." Invoking memories of space, building types, and urban building elements is one of the main principles of La Tendenza (Italian Rationalism). Like Rossi's analogical architecture, South Side's design ranges between inventory and memory, using abstract and familiar building elements from historical and vernacular architecture.

Although the architectural implications of the South Side are rational, still tending toward Modernist and moralistic values of material and invention, another comparison falls into place. Herman Hertzberger's Central Beheer Building in Apeldoorn, Holland (P/A, March 1980, p. 93), is a "city within a city," and its unfinished qualities are intended to encourage a spontaneity amongst its users without returning to populist or vernacular eclecticism. Central Beheer and South Side succeed in their negation of mechanistic provisions for flexibility à la Centre Pompidou, and both express a hybrid between the anti-technocratic attitude of the Rationalists and the modernist purism of Team 10. It is apparent that South Side is foreign to the Middle American setting of Columbus not only by comparing it with European examples, but also by noting the reactions it draws from the local architectural community, who see the building as out of context there.

The myth of contextuality

The recent interpretation of contextualism in America involves imitating or referring to what is around. And "around" means the pluralistic elements of architecture, confused and contaminated by ornamental, expressionistic, and sentimental values.

The abstract qualities of contextualism practiced at South Side allow a new, exciting architecture which does not depend on any current fashionable fad or ideology. Although both laymen and architects are impressed by the instant gratification brought on by the new ornamentalism and eclecticism, the ideas of contextualism contain a far higher potential: the creation of an architectural culture expressing popular and refined values alike. Without analyzing the potential of contextualism through serious research, and without prototypical and large-scale architectural demonstrations, the Post-Modern revolution remains another elite vehicle for architects to gain popularity.

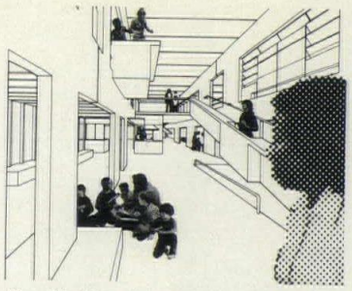
The history of the Settlement

While Post-Modernism has sought its identity in the resurrection of images from the past, the architecture of the South Side Settlement Center has its identity in the political past of its movement. Liberals and the church created settlement houses in the 1880s in order to share their cultural resources and to live with the poor. Before branch libraries, playgrounds, and opportunities for the poor to see cultural events, settlements provided classes, clubs, outings, and kindergartens. Most settlements served immigrant populations, offering, for example, English classes and lodging for migrant workers. Some sought to integrate the new population while others worked to retain the culture of the new arrivals. Today their goals have not changed, but their methods have. They work for community change and towards solving community problems rather than community service.

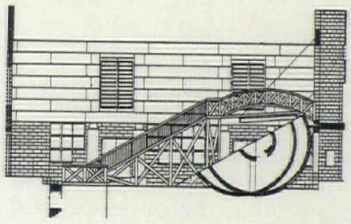
These goals were difficult to achieve in the old, rundown, unsafe building South Side Settlement occupied. After deciding to build, they were eager to create a building which "ought to reflect who we are socially, to concretize the abstract ideas" (Barbara Stovall).

The staff and the board of the South Side Settlement Center were architecturally innocent. David Tritt, a VISTA architect working with them, slowly educated them about their needs, programming, and architecture itself. They went on field trips to Columbus, In, to see architecture which might suit them. When they were finally ready to look for an architect, they knew what they needed. After interviewing local and national firms, they were pointed toward the Children Learning Center in Brooklyn by Studio Works (P/A, Nov. 1973, pp. 106–109). They found its architects closest to their own boldness without clinging to any particular kind of architectural expression. Committed to the ideas and process and not to the stylistic clichés, the architects came "to the town and stayed for about six weeks" the first time they arrived. They "lived in houses and got to know the people" and worked as a team, an approach very compatible with the structure of the Settlement. Their small firm made it possible to be "involved in the innovative exploration of central issues and ideas of architecture as opposed to the business of making buildings" (Mangurian).

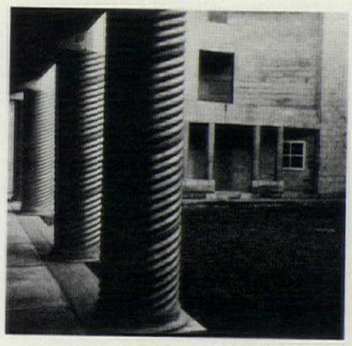
After the design for the building was unveiled, it won a design award in *Progressive Architecture*'s Awards program of 1976. The scheme consisted of six parallel running "superstructures" with interwoven architectures creating a series of spaces of nonhierarchical order. Adapting the ideologies and symbolism of late Modernism and the abstraction of functional ideas, this scheme had to be abandoned after fund-raising fell short of the original goal. After futile attempts to cut down the size and the cost of the project, the architects went back to the drawing board to design a new building.

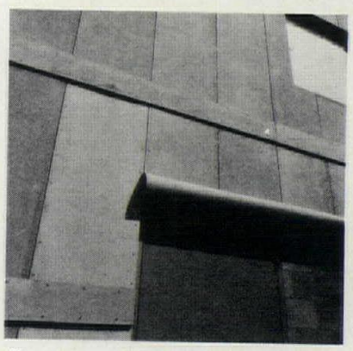


Studio Works' 1975 scheme was based on parallel walls.

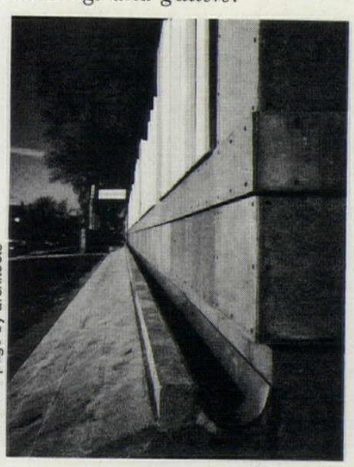


Aycock's proposed courtyard sculpture (above) includes stair to balcony (below).





Custom wall details include drip moldings and gutters.



Photos this page by architects

The second time around

They emerged with a building capturing all the criteria the client set out for them:

A building that transfers the concepts and abstractions of the settlement ideas, political as well as cultural, into built form.

A building that opens new doors of perception to the users.

A building that fits into the neighborhood.

A building that makes sense.

The first scheme resembled a late 1960s mixture of architectural process and flexibility through superimposed infrastructure and high-techism. Comparing the first design to the second, Barbara Stovall now calls the former "abstract, cold, and too architectural."

The present scheme, dating from 1977, embodies ideas about architecture that emerged in the late 1970s. Even though the plan is similar in the two designs, space is made quite differently. The new sensibilities are related to work then becoming known in Europe—the Krier brothers' efforts to reconstruct cities and Aldo Rossi's analysis of traditional urban typologies.

Users and neighbors alike refer to the building as "fitting" into the neighborhood. The fit is achieved by massing rather than detailing; none of the buildings in the complex is bigger than a regular neighborhood house. The choice of detailing—unfinished concrete block, asbestos boards, and standard windows to the streets—creates an atmosphere that echoes the neighborhood pattern of detailing without using materials like wood siding or brick veneer. The grayness of the materials and the hierarchical organization of the building refer to the add-on, homemade architectural environment of the South Side.

The contextual fit is not, as in so many Post-Modern examples, achieved by simulating elements of the neighborhood, but rather by abstraction and simplification of building types and masses indigenous to this particular neighborhood. It is the usage of the type that enables architectures of different eras and ideologies to form a coherent architectural culture. What Quatremiere De Quincy, a French critic of architecture, wrote around 1800 in his *Dictionnaire d'Architecture* applies again today: "... Type presents less the image of something to copy or imitate completely, than the idea of an element itself has to serve as rule for the model ... everything is precise in the model while everything is more or less vague in the type."

A city within suburbia

On a residential site, two blocks from a supermarket and other urban remnants, the buildings are marked out on the ground as masses of different functions. The clinic, the gymnasium, the workshops, the theater, and the central administration building with kitchen are housed in distinct, separate buildings. Bearing different meanings to the community, they can be entered individually. The theater, the most public part, pronounces its separation by tilting away from the symmetry of the complex to invite the access from the corner. There are two main entrances for everyday use, one formal for the clinic and one informal, in effect a back door for the community center.

The massing follows a careful typological analysis. The clinic and workshops are identical slabs of one- and two-story buildings, almost like city walls, acting as perimeters to the north and south. The house of administration is the hearth of the place and divides the space between the slabs into two courts. It houses the community kitchen and dining room and is the center of all activity. The western court is covered over to serve as a gymnasium, while the eastern court is left open to the air.

The missing stair

The case of the missing stair is the only indication that user need, client perception, and the architects' values are not always coherent. The architects attempted to transcend their own role by proposing Alice Aycock to provide an idea for the stair. Funding was received from the NEA and the Ohio Arts Council to realize an important attempt to integrate art into architecture. Aycock's first design, a subterranean sphere and shaft 40 ft deep, was rejected by the board on technical grounds (water table). Her second design, still featuring the sphere, this time above ground, was approved by the board of directors, but indecision and its low priority for the functioning of the complex has hindered its realization. While Aycock's symbolic, mystical, and primal conceptions may be hard to accept for the already nonconformist architecture of the settlement, they should not be separated from the idea of the building itself. Completion of her work is essential to convey this innovative merger between art and architecture. At the moment, the gaping mouth of the theater entry hovers symbolically over the courtyard, waiting for its bridge to life.

While the plan and the circulation reveal an "intelligent and thoughtful building" (Stovall), it is the appearance of the complex that divides the spirits. Young people see it as a castle full of adventures, blue-collar workers identify with the unorthodox shape and its unfinished quality, while white-collar citizens and architects have difficulties accepting the unslick reality. The non-status building exhibits an unexpected array of building materials and finishes: glossy, oversized wood for windows and doors; sheet metal; structural steel painted turquoise; asbestos sheathing. The building elements and materials suggest a hybrid consciousness of 1970 high tech and 1980 primitivism. One proliferates the fading machine age, while the other commemorates the return to craft and traditional building methods.

The South Side Settlement is an important example because it touches forthrightly on so many issues of architectural theory and practice today, unlike the pluralistic interpretations of Post-Modernism, which obscure them. Seeking a redefinition of architecture, Hodgetts and Mangurian have created an architecture based on instinctive belief in social and cultural harmony in the environment. □

Gagosian Studio, Venice, Ca

Venetian masque

Barbara Goldstein

Studio Works has designed a rationalistic but mysterious residence and art gallery that is both hard and soft, positive and negative.

From the outside it looks almost ordinary—yet strange, ominous, and blank. The labored symmetry and the calculated precision of its fabrication both indicate that this is not a casual composition, a building for a factory or studio, like a painted out palimpsest of grocery store front. The architecture is intentional, classical, yet mysterious. Its noninflected stucco surface only hints at its secrets. The minimal rectangular indentation, framed centrally by doors, cornice, and drainpipes, begs to be completed. It is so neutral it will be passed a thousand times without a glance, yet the mystery remains.

The rear alley façade is radically different but just as consciously composed. A carefully planned mess, it creates the impression of an adolescent tossing his hair in a car mirror. Every kink is intentional. A porch hangs out here, balanced by a chimney there, and this seemingly ad hoc appearance is a knowing retort to the funkiness of the neighborhood. The composition is precious; every move was planned, with little left to chance.

This building was meant to present the tough, masculine appearance of the strong, silent type. The client specified a fortress with no windows facing the street. He worried about security in this transitional, crime-ridden neighborhood. He did not want to call attention to himself or the building. But the exterior is only half the story; beyond the blank, forbidding public face lies a light-bathed collection of feminine interior spaces.

Palazzo Gagosian is the name that Studio Works chose to call it in the early sketches. Influenced by Robert Mangurian's fond memories of Italy and Craig Hodgetts's admiration for his mentor James Stirling, the building is crafted as though it were a gradually accreted fragment chipped from a dense urban composition.

The design did, in fact, specifically evolve from the particular requirements of its site: the spiritual and formal context of building in Venice, and the restrictions imposed by building codes. Fire regulations determined much of the form: the residential section had to be set back from adjacent buildings; window types and sizes were prescribed, as were three full sets of stairs. It was also necessary to provide a loading dock, four parking spaces and wheelchair access through the site.

The program itself was complex, requiring great flexibility. The client, an art dealer, needed a gallery, an apartment for himself, and a small, independently accessible suite that would be used for a variety of functions. Each area was to be mutually exclusive.

For these reasons, the architects claim the context created the design; that this was an "automatic building"; that the envelope and plan evolved from the elaboration of a predetermined diagram. Their job was simply to "style" it, to "straighten it out." Coyness aside, though, the conscious craft shown here is central to the architecture.

Basically, the building has a linear plan with symmetrically disposed spaces. The most dramatic space is the one "that's not there"—the rotunda—a large circular volume in the center of the second floor. This acts as the building's eye and lungs, and it is here that all wandering comes to an end. There is nothing at the center.

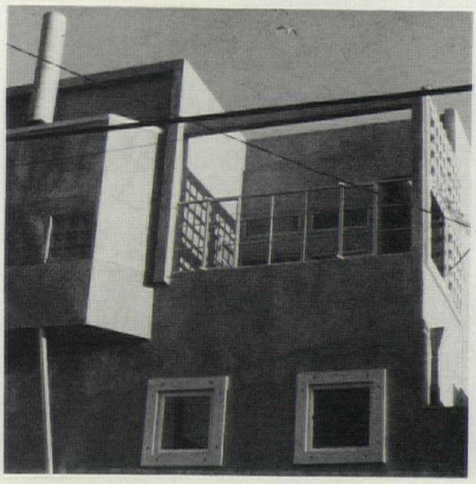
The rotunda typifies the architects' precision and love of detail because in the end it does not feel like a negative space, but an elegantly proportioned room opened to the sky. It is modulated by a sequence of punctuations rising from floor to ceiling: first a series of doors and door-sized openings, next a row of windows, and finally a row of clerestories. One can circulate around the space underneath a partial arcade, or one can address it from a carved-out pulpit. It is the eye of God, and the placing of man in the center exemplifies the architects' philosophy.

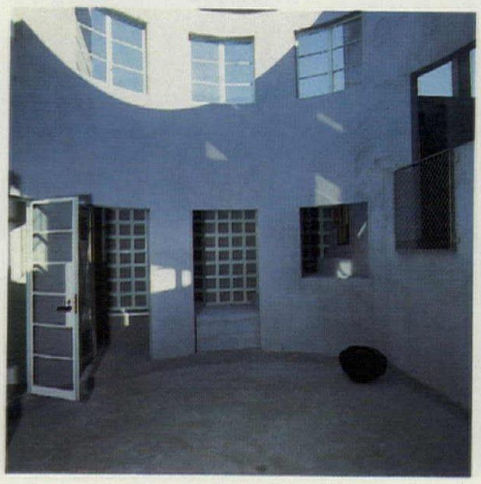
The rotunda has archetypal strength, and as a symbolic void recalls related types, such as the Pantheon and the Colosseum. A rotunda was also used much closer to home, however, at the Mission Inn in Riverside, another intended urban agglomeration. The negative cylinder has also fascinated James Stirling, who used it in his Dusseldorf museum design. Whatever its origins, though, the central space in the Gagosian complex is the most powerful image in the building. Most of the other rooms recede in importance compared to it.

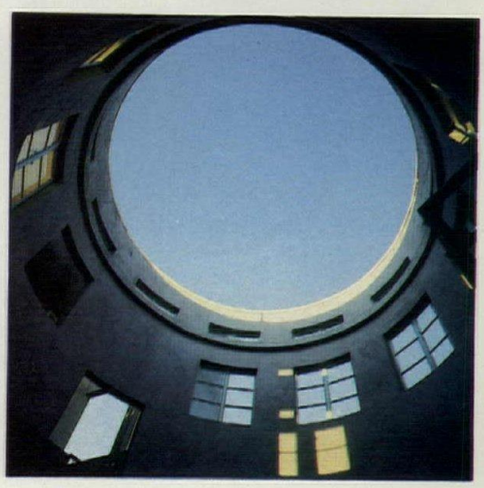
Movement through the building is treated as a major spatial and perceptual event. The architects emphasized the linear upward movement by meticulously engineering the lighting and the fabrication of the stairways. The material of the stairs is changed from steel decking to wood halfway up, underlining the transition from public to private zones. The modeled wall above the staircase continues stepping up, extending the visual climb.

The slight insistence of natural light in this building is an achievement, and yet it is ma-

In addition to other anomolies, this gallery and residence simultaneously exhibits a controlled and a casual appearance; the former is seen more readily at the front (facing page top), the latter at the rear (bottom left). A central rotunda (bottom right) is the main feature of the upper-level living quarters.







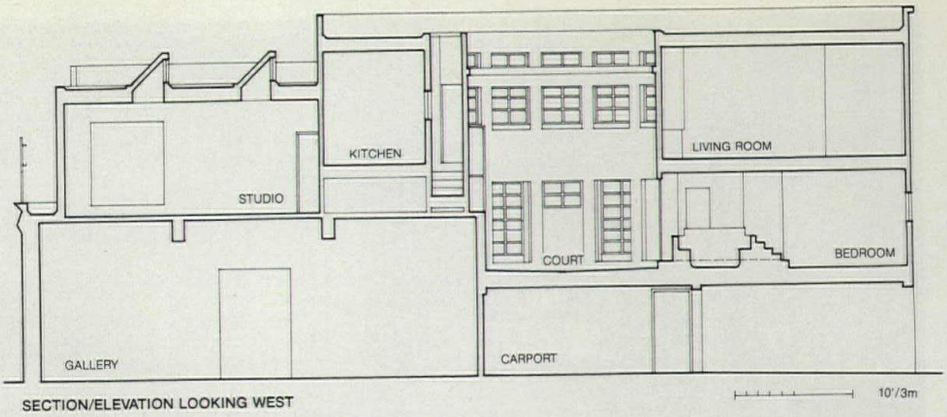
nipulated with complete confidence and technical command. For example, although the entry passage is dark and mysterious, the end wall of the gallery is washed by a thin shaft of natural light that filters through a slot created by the second-floor setback. The outside wall of the living room is perforated by a stepped series of windows, which in late afternoon create a tracking pattern of light across the polished living room floor.

One impressive aspect of the building is the way the architects manipulated materials and forms to create a classical language, without once resorting to pastiche. The truth is there, the decoration is there, but it's stated in a language of common, readymade parts. The gallery ceiling, for example, is a highly articulated and symmetrical pattern of beams, decking, and ducts. Necessity is the mother of ornament.

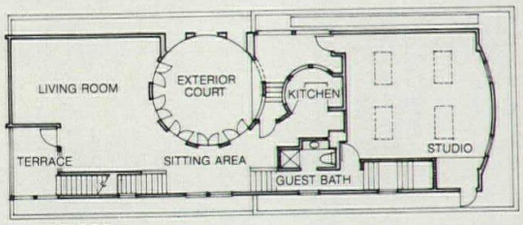
Sometimes the use of ornament is intentionally ironic. The Jacuzzi tub in the bedroom is shaped like a raised Greek cross with rose-pink plastic laminate-covered stairs leading to it. It is on axis with the rotunda and the pulpit beyond. This is the ritual bath and sacrificial altar. Above the tub, a dropped cross in the ceiling reiterates the theme. The entire bedroom is symbolically forbidding, clad with hard, cold materials.

There are certain inherent contradictions arising from such detailing. Here, as in their Settlement house in Columbus, Oh, the architects have used many devices—such as openings that frame the figure to create a sense of proportion—to place man in the center. The first and most obvious example of this is on the Market Street front, where the bowed window of the second-floor office is set back from the cut-out façade, thus creating a formal minstrel gallery overlooking the street.

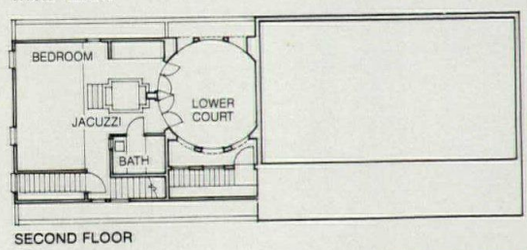
Concurrent with this concern for placing man at the center is the building's technological imagery. The details and choice of materials imply an anonymous institutional quality, a machinelike, neutral aesthetic.



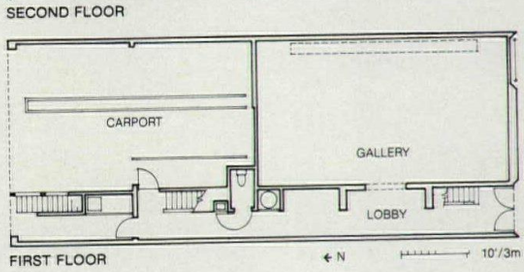
SECTION/ELEVATION LOOKING WEST



THIRD FLOOR



SECOND FLOOR

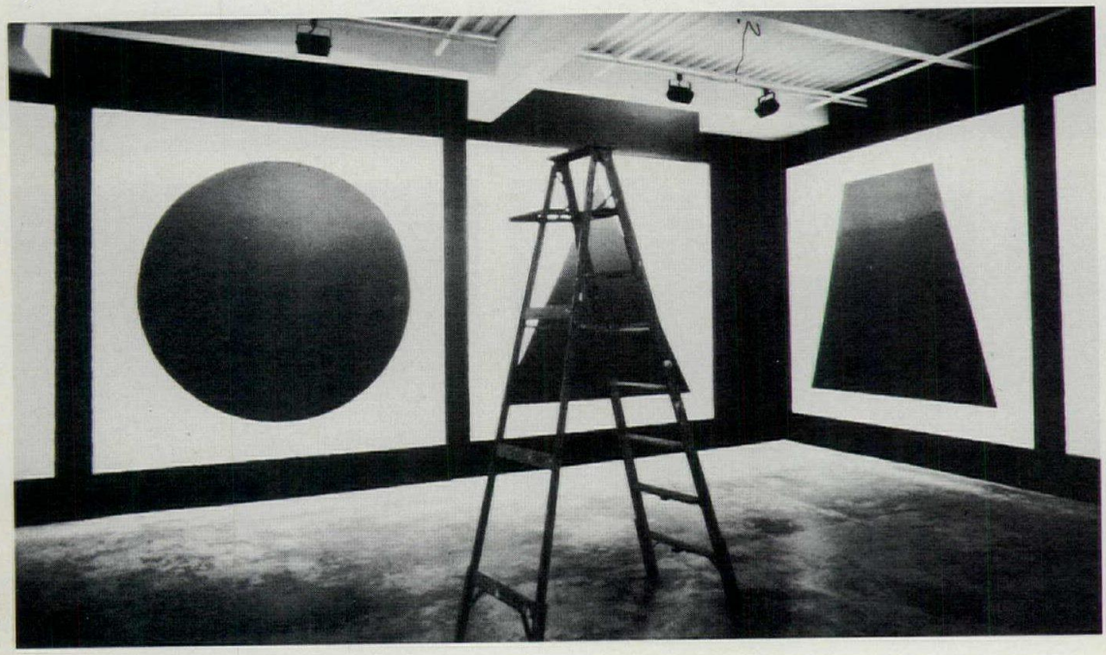


FIRST FLOOR ← N 10'/3m

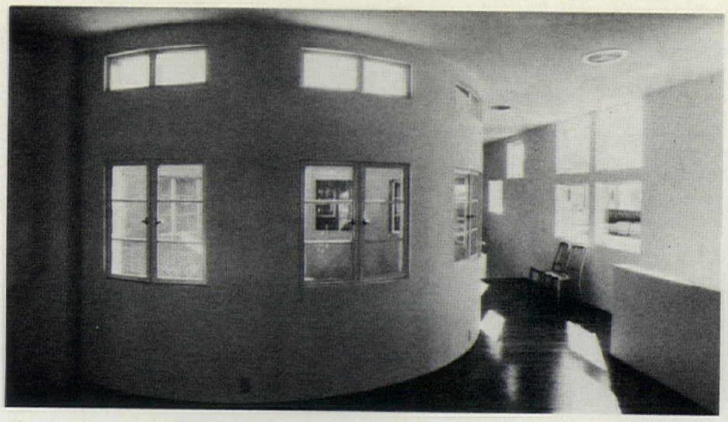
The constant dialogue between the hard, masculine image of technology and the feminine qualities of form and modulation is in fact the building's real strength. This is a building that symbolizes humanity; it is male and female, hard and soft, positive and negative. And perhaps a bit imperfect. □

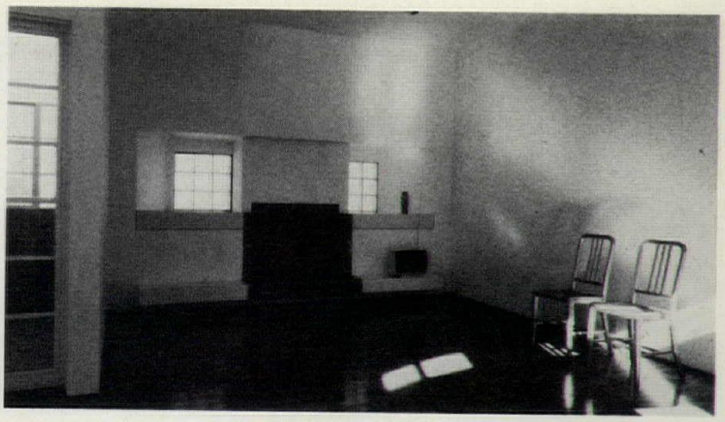
Data

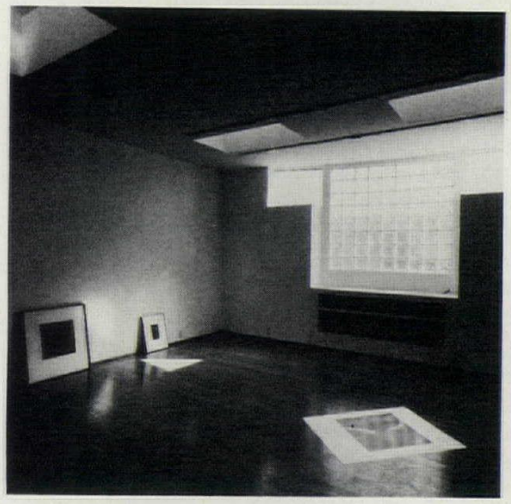
Project: *Larry Gagosian Gallery, Venice, Ca.*
Architects: *Studio Works: Craig Hodgetts, Robert Mangurian, architects, with Frank Lupo and Audrey Matlock.*
Site: *a 30' x 85' flat site with frontage on street and alley, flanked by storefront buildings, one-half block from beach.*
Program: *two downstairs art galleries of 1200 and 500 sq ft; 1700 sq ft of living space above; 400 sq ft of covered parking for four cars; 350-sq-ft private courtyard.*
Structural system: *concrete block and structural steel stud bearing walls; metal deck with concrete and wood joist floor and roof system; miscellaneous steel columns and beams.*
Major materials: *stucco and smooth concrete exterior; gypsum board interior with tile, granite, and marble trim; wood floors; concrete floors in gallery; metal and wire-glass windows.*
Mechanical system: *forced air, gas fired.*
Consultants: *Ismail & Wagner, structural; Sullivan & Associates, mechanical.*
Client: *Larry Gagosian.*
General contractor: *F and G Construction.*
Cost: *withheld at request of client.*
Photography: *Tim Street-Porter.*

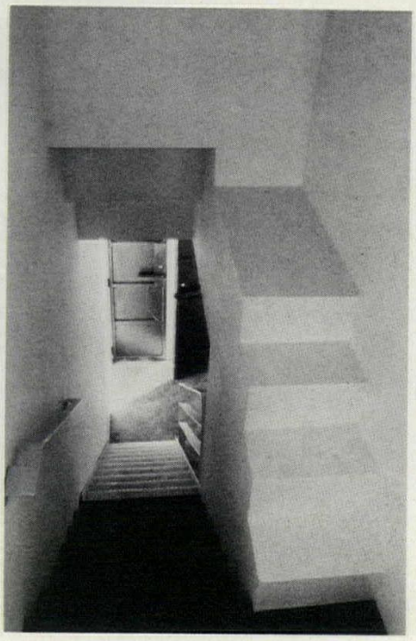


Inside (facing page), the bath (middle) takes a highly ritualized appearance, while the kitchen (bottom right) echoes the rotunda's form. A stair (bottom middle) leads nowhere, and in the studio (bottom left) illumination is aided by skylights. The rotunda extends into the living room (top photos).









Interventions

The Bauhaus always taught that a designer could design anything from a spoon to a city. We have our reservations about some of the cities that have emerged from this idea, but closer to the spoon end of the continuum, there have been notable successes.

Collected here are three of what we call interventions: projects that are insertions into something larger. These projects have to do not just with adding on, but with manipulating the perception of what is already there. Taft Architects' Hendley Building is a refurbished 19th-Century office building, onto which a slot of "modern" space has been added. The slot not only provides a space in which the required technological equipment—venting, plumbing, wiring—can be slipped without disturbing the Victorian interior, but does so in a way that fixes the original in time. Frozen and heightened in intensity by this figure-ground juxtaposition, the ex-Cotton Export headquarters no longer operates as another piece of Old-Galveston-commercial backdrop.

Similarly, Steven Holl's alterations to an advertising agency's offices in a rambling clapboard house in Southern New Jersey alter the way in which the house sits on the street and, especially, the alleyway behind. George Baird's intricate manipulations of the front and rear of a semidetached house in Toronto recall the home's original porches while leaving no doubt about their subsequent amputation and replacement.

In any case, we are rescuing a scale of architecture that is rarely considered for publication. It is a scale that often falls prey to the argument that smallness is tantamount to insignificance. "How many people will really be affected?" is the question aggressively put. P/A has long been on the other side of this argument—as the furor over Michael Graves's back porches and Robert Stern's poolhouse a few years back attests. And so we remain.

Haig house, Toronto

George Baird reorganized the front and back of this city house with apparitions of its former self.

Data

Project: *front and rear additions to Haig House, Toronto.*
Architects: *George Baird, architect; Barry Sampson, associate; Toronto.*
Client: *Donald C. Haig.*
Program: *sunroom and decks on three levels in rear; parking and entrance for basement and first floor in front.*
Site: *semi-detached 2½-story house circa 1910 on 24' x 102' inner-city lot.*
Structure: *concrete block foundations; poured concrete slabs (front); steel frame, steel pan floor and roof (rear).*
Major materials: *concrete; painted structural steel, sheet steel, and perforated sheet steel; rolling aluminum garage door; granite panels.*
Consultants: *E.N. Onen & Associates, structural.*
General contractor: *Fairwin Construction.*
Photography: *Frederic Urban.*

Facing page: Front (top left) and rear (top right) of Toronto house as reinterpreted by Baird. Bottom: Detail of front showing the architect's meticulous attention to line, color, and material.

Wraith exquis

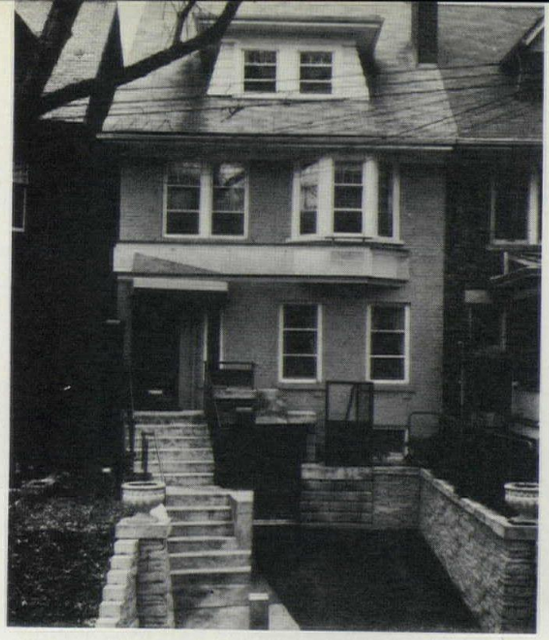
This was once a simple house. Like its Toronto neighbors, it was built in the 1910s with a bay window, dormers, and porches front and back for nice weather. The neighborhood went through the predictable stages of demand until, in the 1960s, it was "rediscovered." The process was often called "white painting" because new owners, in an attempt to make these houses more modern, removed many of the porches and repainted the façades white or a light pastel.

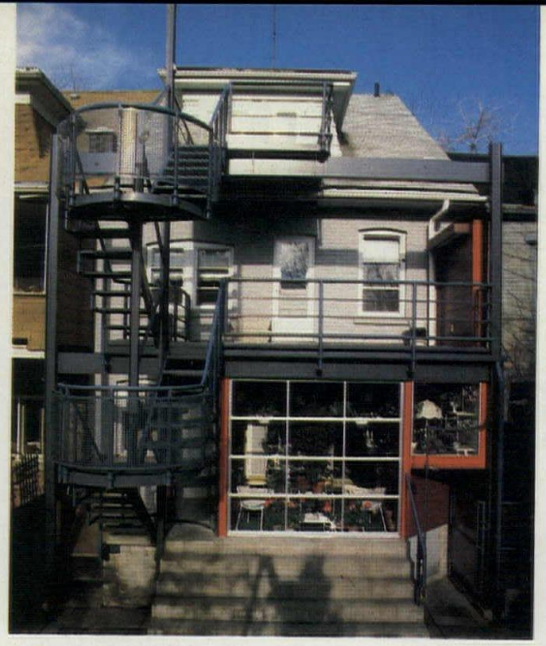
A decade later, the newer owners of this house hired Baird to add a sunroom and decks to the back and, five years later, to redo the approach from the street. Baird's approach for the back (completed in 1974) was literal, exuberant, and unreservedly industrial. He constructed an overall frame, placed it several feet forward of the existing elevation, and simply attached the specific elements to it. Decks are strung between house and frame. A rolling garage door—the openable edge of the sunroom—is hung from a cross beam. A spiral staircase is woven in and out. All of this is in metal, painted bright blue and fire engine red.

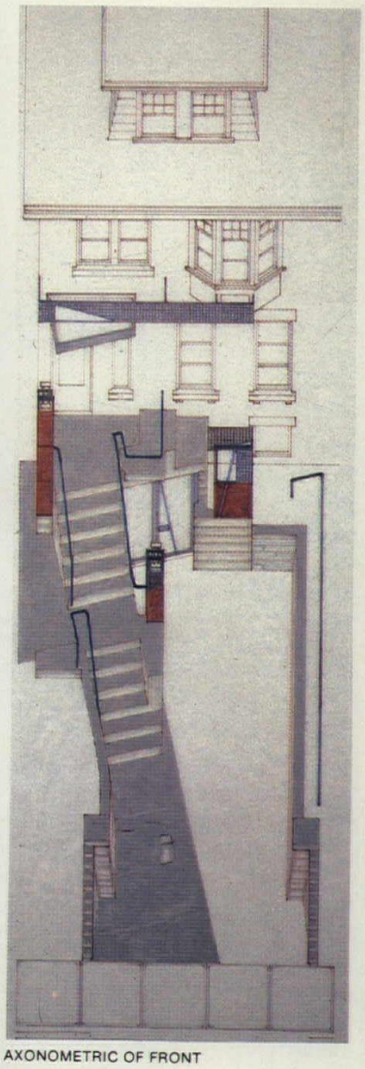
By 1979, when Baird was handed the less tangible commission of giving coherence to the front, his approach had changed. The geometry of the front is more complex, the color scheme subtler, and the organization more fragmented. Traditional forms and materials are added to the industrial ones.

There were few specifics in the program. Baird removed the barrier between front walk and driveway and connected these elements in a seeming intersection (the driveway as part of a perpendicular grid and the front walk as part of a diagonal one). Into this forecourt, he inserted various pieces to identify points along the path, reinforce each grid, and suggest—with the non-materiality befitting a ghost—the former front porch.

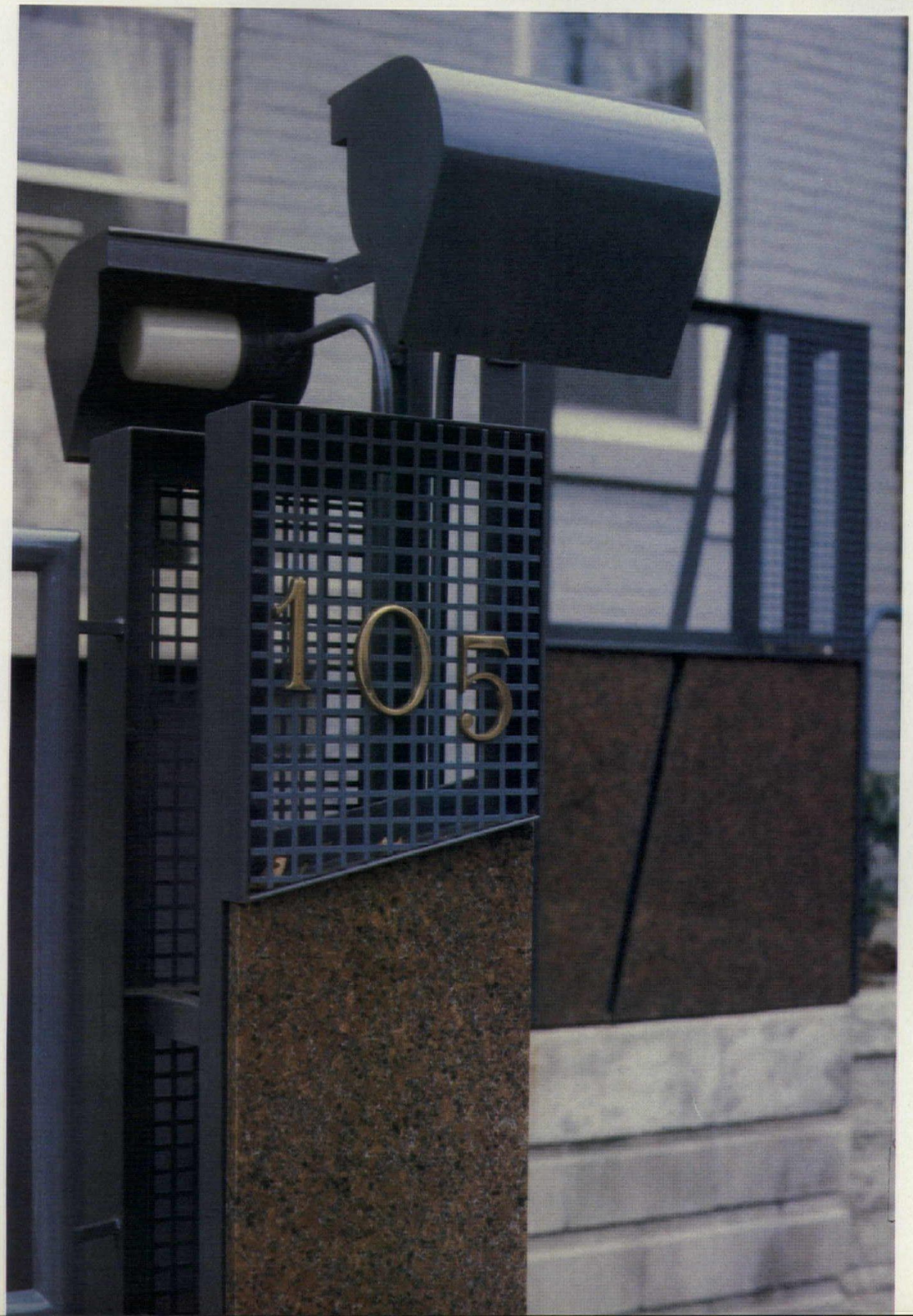
These details are meticulous. The "stop sign" at the end of the drive, for instance, juxtaposes masonry, polished granite, metal framing, wire mesh, several colors, and contradictory geometrical propositions, yet remains spare and delicate. Each detail stands physically aloof—not an outgrowth but an intervention. [Nory Miller]

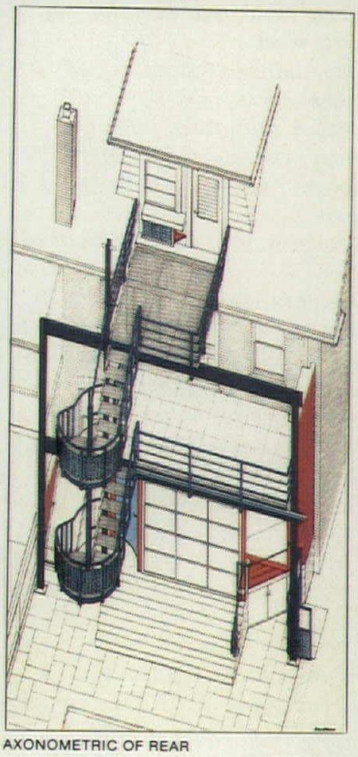






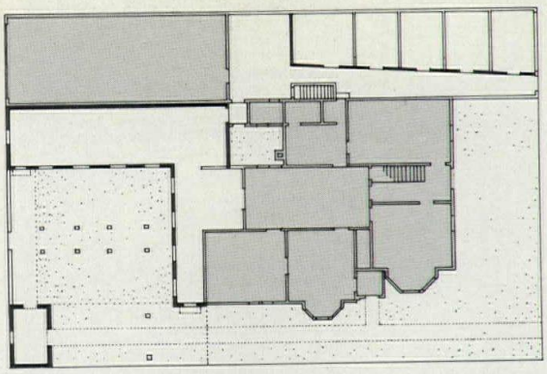
AXONOMETRIC OF FRONT



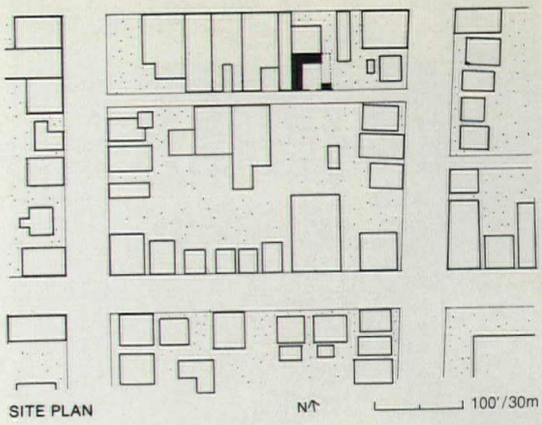


AXONOMETRIC OF REAR

Wyble Advertising, Millville, NJ



PLAN (EXISTING PORTIONS SHADED)



SITE PLAN

Good fences

With small interventions, Steven Holl establishes a firm piece of urban grid out of a loosely organized assemblage of adjacent originals and later additions.

Project: *addition and remodeling, Millville, NJ.*
Architect: *Steven Holl, architect; Joseph Fenton, assistant.*
Site: *rear lot of 19th-Century house used as office space; old corner drugstore previously incorporated as storage area.*
Program: *977-sq-ft wing for five drafting tables and adjacent workspace; revamping undifferentiated 1050-sq-ft storage area into offices, mail, and storage rooms.*
Structural system: *filled concrete block.*
Mechanical system: *forced warm air.*
Major materials: *unpainted stucco exterior, red integral color concrete pavers, gypsum board, paint.*
Consultant: *Paul Gossen, structural.*
General contractor: *William Biggs.*
Cost: *$48,445 (1978), including landscaping and new heating system for entire building. $49.50 per sq ft for addition. $17 per sq ft for remodeling.*
Client: *Wyble Advertising.*

Facing page: ***1*** *aedicule,* ***2*** *courtyard, and* ***3*** *view through aedicule of drafting wing.* ***4*** *"Main Street," the remodeled storeroom,* ***5*** *one of its façades, and* ***6*** *the end office used as a supply room.*

Robert Frost's "good fences make good neighbors" was written with baleful irony, and Frost was not very subtly rooting for the gremlin of decay, the "something there is that doesn't love a wall." His was an attitude born from open meadows, apple orchards, and stands of pine, a rural sensibility, yet also the basis of many American suburbs and small towns. What Steven Holl is stating in this small addition and remodeled storage room for a hardly larger 19th-Century house is the urban case. It is the case for walls, hard edges, straight lines, and emblematically simple organizations.

Holl has collected his ideas about American building configurations in urban settings in a pamphlet entitled "The Alphabet City," published last March. In it he analyzes the types of grid patterns that were imposed on American cities and the building plans that developed in response. The plan's resemblance to Roman letters suggested the title.

Consonantly, Holl's Millville addition transforms a 19th-Century house plopped in the center of its lot with a haphazard extension on the rear into a modified alphabet letter. The addition (also at the rear) captures the sunny backyard and makes of it an interior courtyard with a hard edge to the alley. It makes entering from the parking lot across the alley a clear, even ceremonial procession.

The addition itself is quite small and hovers ambiguously between an "L," a "U," and an "O." There is a definite zone of workspace added to the rear of the house, a definite projecting wing, a parallel wing (that may or may not be added later) implied by a roofless aedicule and a back wall with gate.

The forms are abstracted, sheathed in stucco, and inflected subtly by the darker white and smoother texture of cast concrete sills and cornice. Color is provided by pinkish red pavers—a walkway from the back gate through the aedicule and down the side of the house to the firm's main entrance (the front door is not used)—and by the lush green of the courtyard, accented by the green-painted metal gate. Square-cut windows provide a rhythm to each wing and views onto the courtyard (and an orienting view of the alley at the back). The courtyard is filled with a white trellis of grapevines and rose bushes. In summer, a picnic table is the employee cafeteria.

Despite obvious contrasts—shed to flat roof, clapboarding to stucco—the addition blends rather well. Partly this is a function of color: white next to white with accents of red and green (a brick chimney and green shutters in the original house). Partly it is a function of scale. The whole complex is very small. And what contrast there is is modulated. From the back there seems not to be a juxtaposition, but a series of steps from trellising, to addition, to earlier addition, to house.

At the same time, the addition has a quite different architectural quality. The house—an Italianate Gothic Revival once owned by Millville's first family—is pure American Victorian. The addition is more in the spirit of Mycenae or Cordoba or the Inca ruins of South America. The aedicule particularly, formed with an attention to perspective views, has an evocative presence that one suspects only in its simplicity eludes the question of anomoly.

The corner drugstore

The interior of the addition was arranged by its occupants, but in another part of the complex—a storage room that had once been the drugstore next door—Holl was asked to make his second intervention. Though quite different in mood, it is equally founded in Holl's ideas about urban gridding.

The long room is arranged like a small-town Main Street. Five offices, separated by shoulder-height walls, open off one side of a corridor, each with its own "shopfront" façade. There are variations in openness and geometric pattern, and each façade has a different pastel hue painted within the rims of its punched openings. Some of the variations carry clear graphic messages, such as the grid of one façade in which only the windows over the door opening have slight frames. Others give clues to the function of the space inside, whether private office or general supply room. Providing order is a rigid design framework within which the variations occur.

"Before I built a wall," wrote Frost, "I'd ask to know what I was walling in or walling out . . ." In Millville, Holl is walling in amorphous in-between space and making it usable—individually as offices and collectively as courtyard. [Nory Miller]

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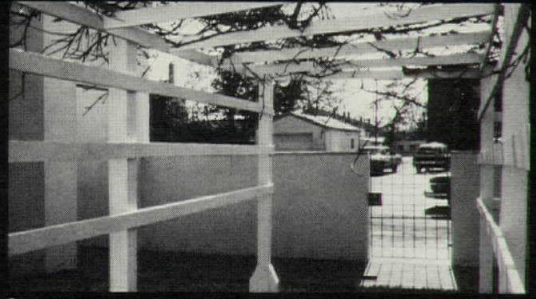

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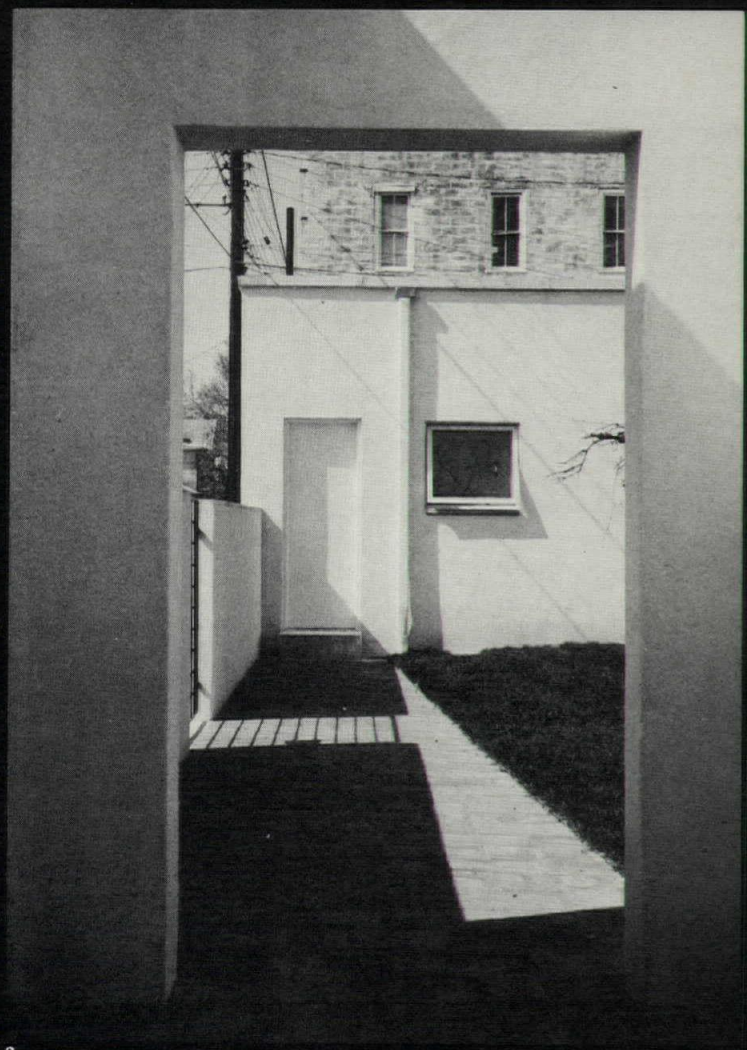

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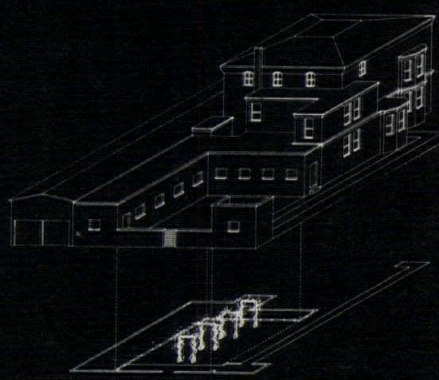
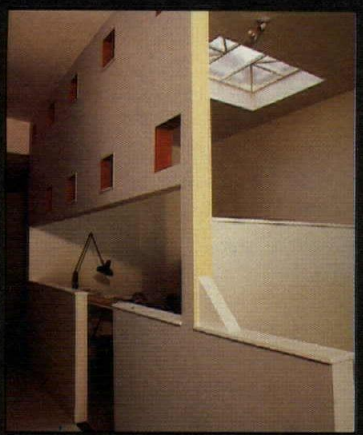


AXONOMETRIC OF ADDITION



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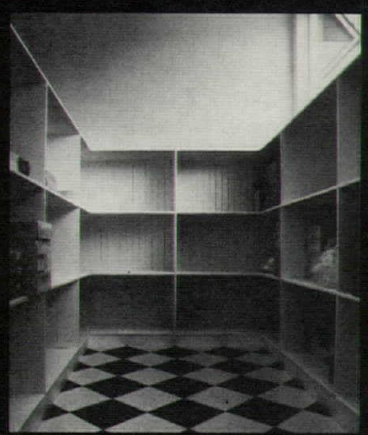

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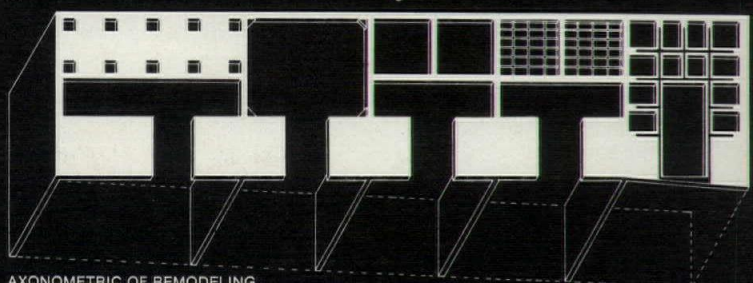
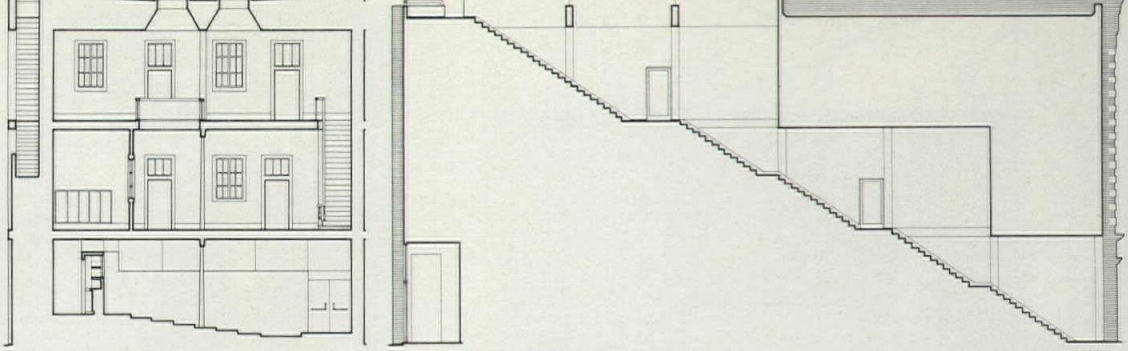


AXONOMETRIC OF REMODELING

Hendley Building, Galveston, Tx



A new zone of contemporary technology reconstitutes the usefulness of another grand old structure on Galveston's The Strand, with interesting implications for architectural time warp.

Data

Project: *Hendley Building renovation and addition, Galveston, Tx.*
Architect: *Taft Architects, Houston. John J. Casbarian, Danny Samuels, Robert H. Timme, partners. Scott Waugh, project assistant; Jeffrey Averill, Marc Boucher, J.E. McManus, Jr., Joyce Rosner, support team.*
Site: *44' x 110' plus 5' x 110' strip of adjoining property.*
Program: *1500-sq-ft exhibit space, 1500-sq-ft work room, 1000-sq-ft theater on ground floor; 4000-sq-ft administrative offices on second floor; 4000-sq-ft offices on third.*
Structure: *buttress system, of eight pairs of 18-in. H-beams joined by a gridwork of parallel steel bents and tensioned against the side of the building, is cantilevered on 40-ft-long piles. Floors are checker plate steel.*
Major materials: *existing—brick, granite columns, plaster walls; new—painted stucco, tile, gypsum board.*
Mechanical system: *multizone system providing heat through electric induction and cooled air through direct expansion.*
Consultants: *George Cunningham Associates, structural; Arthur Rice Associates, mechanical.*
General contractor: *Trentham Corporation.*
Cost: *$405,000 (1979 completion), $21 per sq ft.*
Photography: *Taft Architects.*
Client: *The Galveston Historical Foundation.*

Neither separate nor equal

By sensitively attaching what they describe as a "pacemaker" to a Victorian commercial structure in Galveston, Tx, Taft Architects of Houston were able to give continued life to an old building. The adroit solution converted a building structured in 1859 for cotton exporting into offices and exhibition area for the Galveston Historical Foundation, without compromising its integrity.

The foundation had purchased the Hendley Building on Galveston's famed The Strand in 1968, to halt its demolition. In 1977, the foundation decided to move its own offices there. There was a difficulty, however. The adjacent building had been demolished in the 1950s, according to foundation executive director Peter Brink, and the Hendley Building's exposed wall had deteriorated badly, bowing out 10 in. A structural engineer advised that to save the building, the wall would have to be rebuilt or buttressed, operations of apparently equal cost.

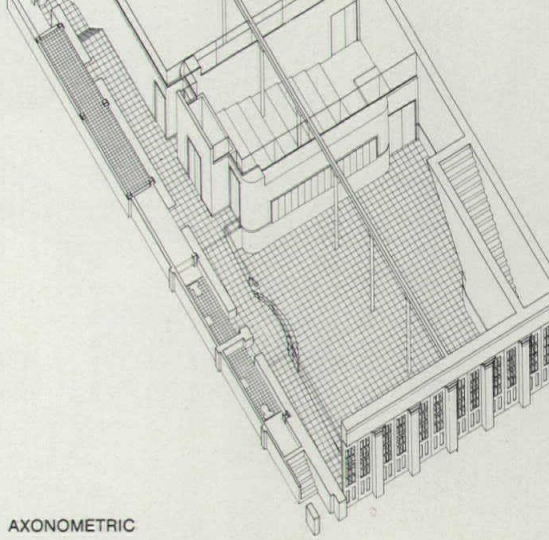
The foundation commissioned Taft Architects, whose previous work on The Strand (P/A, Nov. 1978) had been well received, to examine the possibilities of adapting the building to its use, by adding the necessary services such as heating, air conditioning, toilets, storage, and secondary exit stairs not included in the original program. Taft devised a structural solution and turned it to architectural advantage. A 5-ft-deep by 100-ft-long truss buttress system holds all the new requirements within its three stories. The existing interior remains unchanged.

The architects inventively related the new structure to the old through scale and color, and the pattern of columns also gives needed scale. It is expressed on the new façade in two ways: either directly where there are no infill panels or by scoring the flat stucco wall where it hides the columns. Additional modulation in scale is created by the exposed stair with landings at each floor. Taft was inspired here by the "ghost effect" of the stair that was left when the adjoining building was demolished for a parking lot.

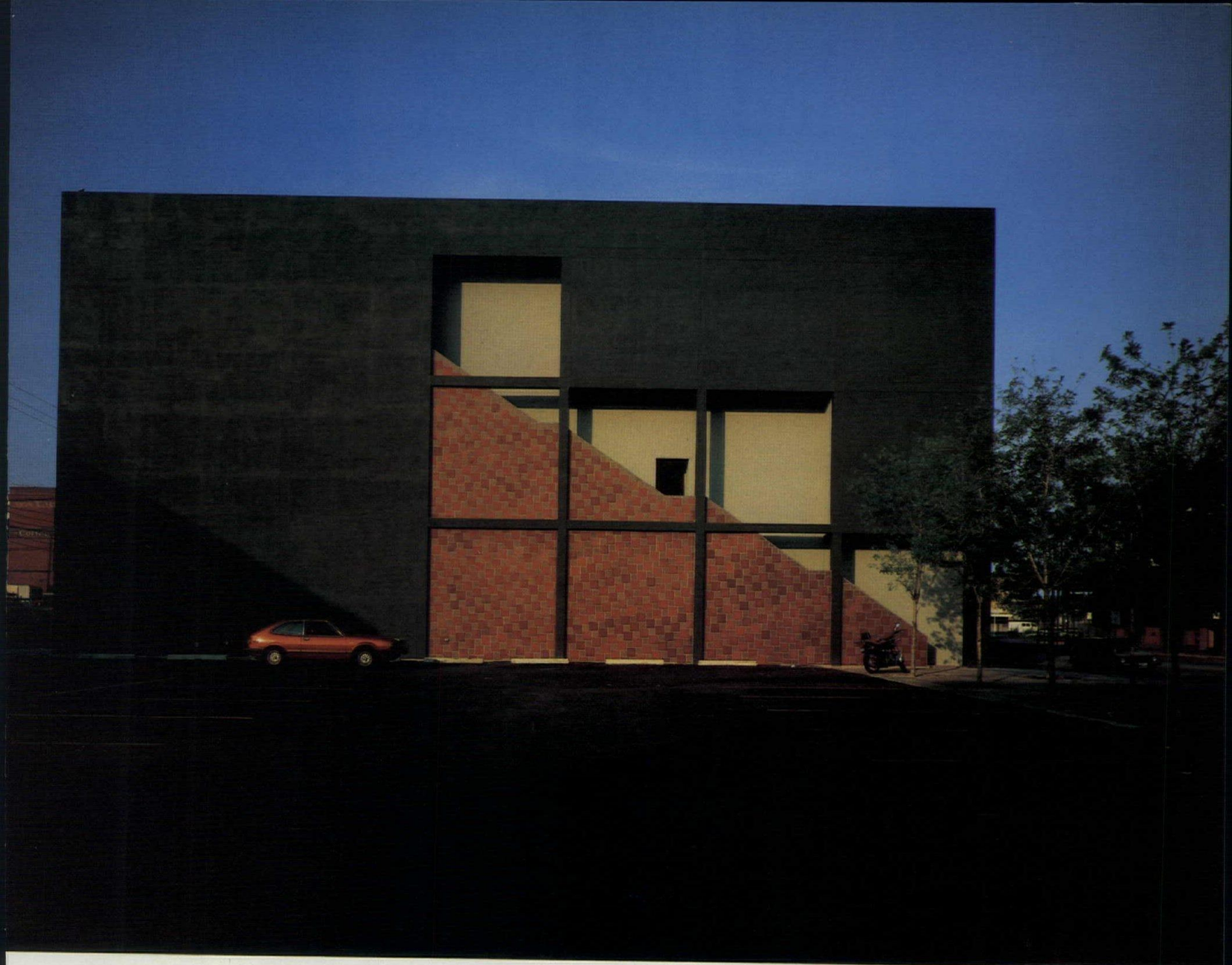
The color scheme came out of the architects' study of Victorian color, which used a dominant color with its complement for trim. The color here is a reversal of the original. Where the old building has gray granite with green trim on the windows, the new structure is almost all green with gray accents. The exposed stair wall is covered with tile in a checkerboard pattern of red—from the brick front of the Hendley Building—and brown—from an adjacent icehouse.

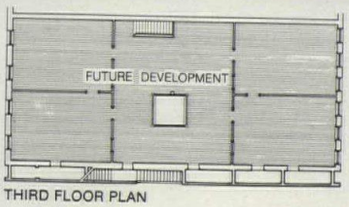
Having restricted the new elements to this one area, the architects were able to maintain and restore the essential character of the existing interior. Cast-iron columns are left exposed, and low, movable partitions are used to give privacy to individual offices. On the first floor, an auditorium is separated from the exhibit space by freestanding walls.

"We didn't want to mimic the old," said Taft partners, "but rather to reinterpret it with sympathy and harmony." This they have done, and with great style. There is no mistaking that one part is from the 1850s and one from the 1970s, but unlike too many such projects these days, the new respects the old and enhances it. [Carleton Knight III]

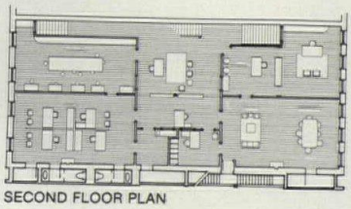


AXONOMETRIC

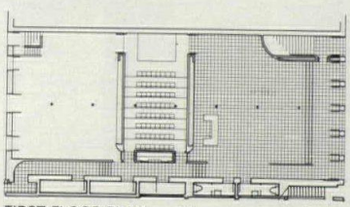




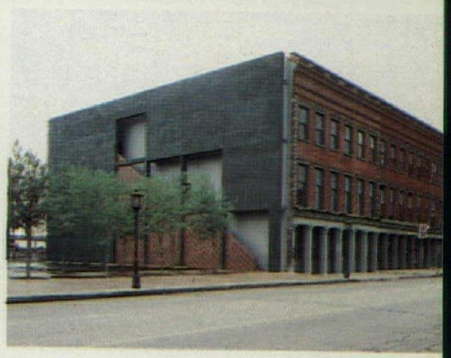
THIRD FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN FN 20'/6m



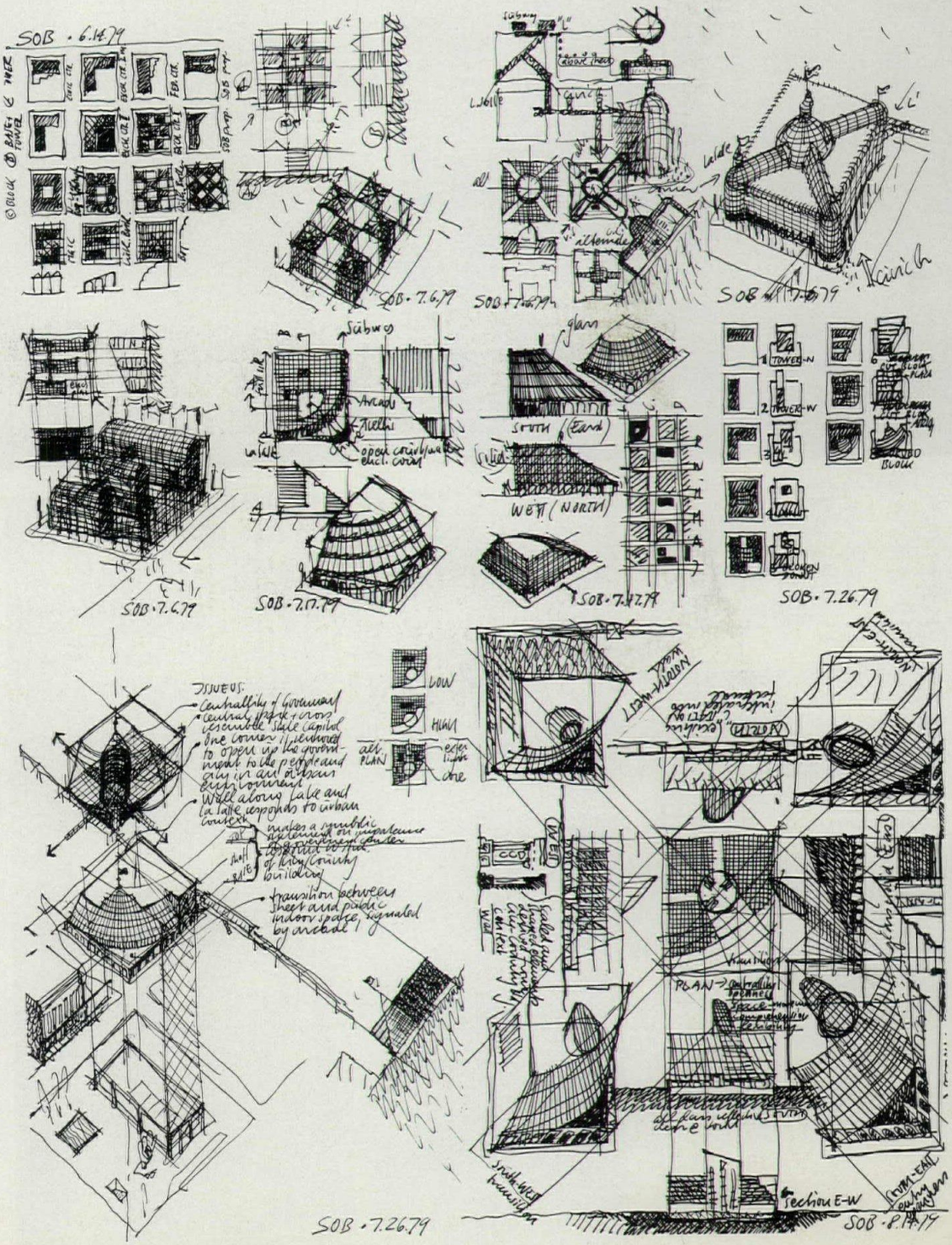
The new elevation (top) subtly reverses the color scheme of the 19th-Century façade (above) and less subtly explodes the scale of architectural gesture. Left: a detail of the interior.

State of Illinois Center, Chicago

Panoply of images

Now under construction in Chicago, a state office building attempts to bring together diverse elements of technology and image.

For a building that is just in the early stages of construction, the State of Illinois Center has already prompted a quantity of speculative printed words. Designed by Helmut Jahn in a joint venture between C.F. Murphy Associates and Lester B. Knight & Associates, the scheme has very ambitious goals and risks controversy to attain them. It is an amalgam of technology, image, urban design, and historic symbolism. The relatively low—17-story—building centers around a rotunda atrium 160 ft in diameter that projects through the roof to end in a truncated cylinder. Intended to represent a "modern day



Jahn's early conceptual sketches indicate thought processes ranging from a concern for contextual and historic implications to image and orientation studies. Energy aspects are addressed more in the mechanical functions than the formal expression. A thoroughly resolved system of control and mechanical considerations includes ice storage and computer monitoring and operation. Using a DOE-2 program, Murphy-Knight's design engineers estimate that building annual HVAC load will be about 45,000 Btu/sq ft.

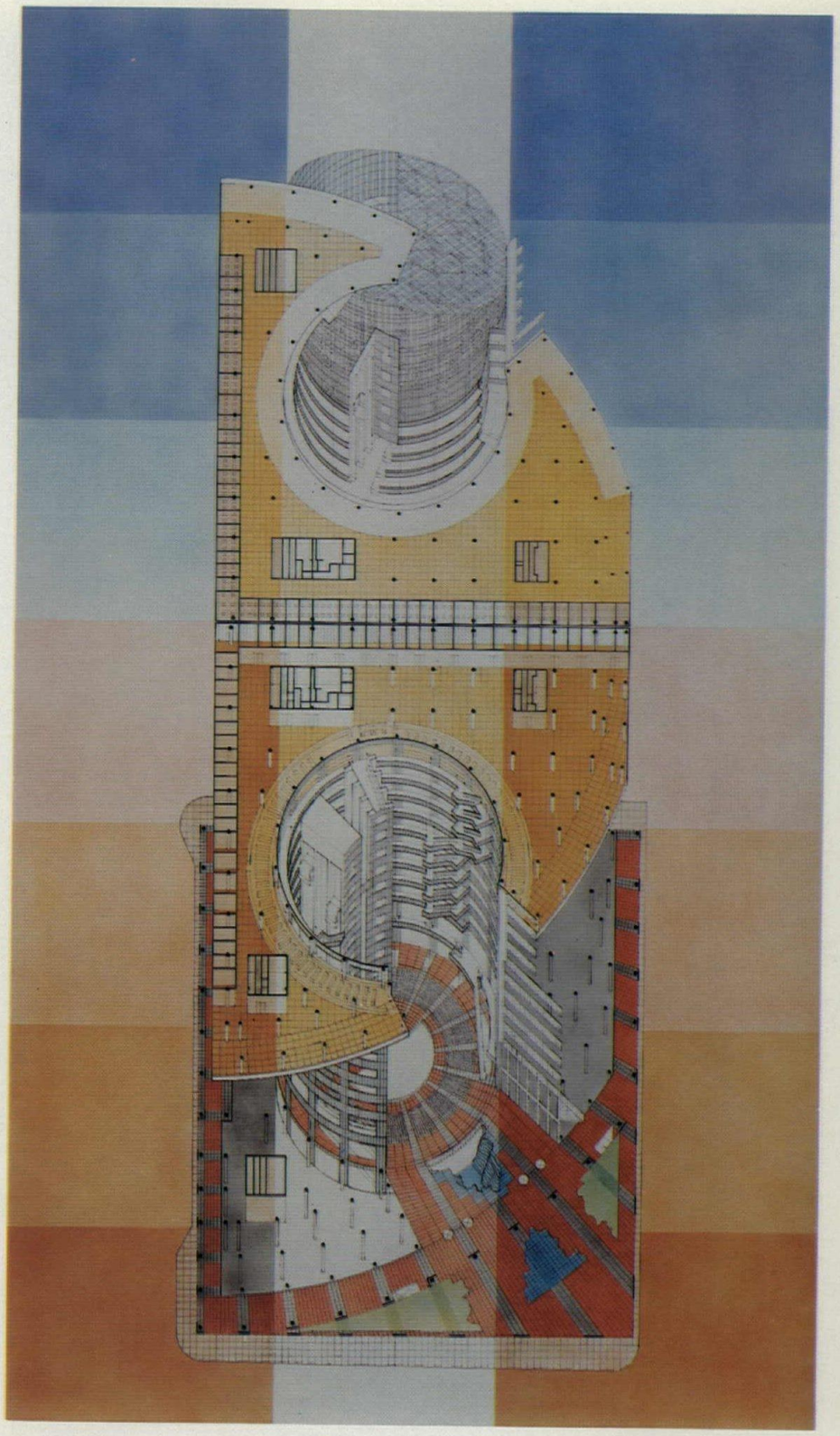
dome," the cylinder crowns a structure that is at once monumental and approachable; governmental aplomb seems comfortably combined with openness and celebration.

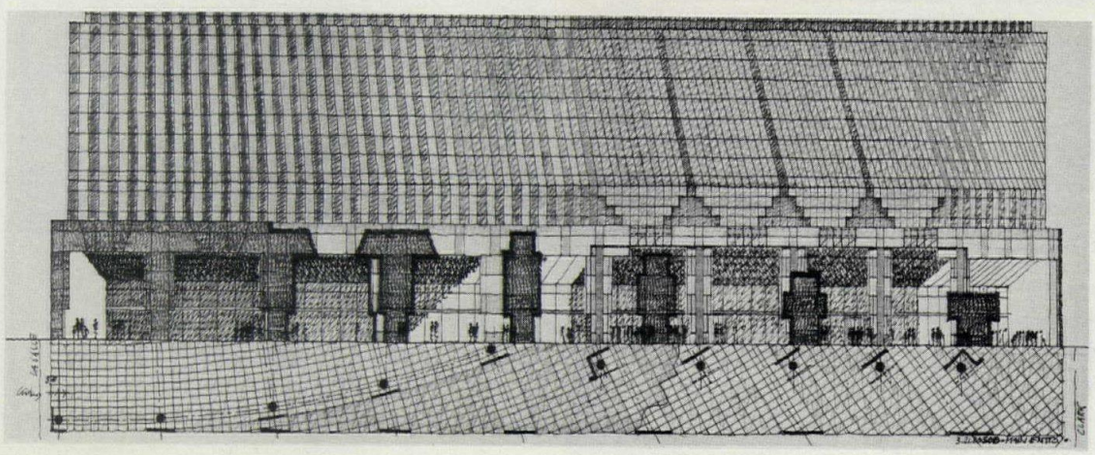
All of these attributes are, of course, intentional. Jahn has set out to embody a rich panoply of images, and the sketches that are included here show but some of the thought behind the final form. In striving to reinforce the urban "canyons" along Lake and LaSalle Streets—north and west, respectively—the design calls for the building to pull itself up to full height at the lot line. Part of the Clark Street façade (east) also comes out to the sidewalk, although it steps back in three major segments with a base and a top before sweeping into a robust curve. The arc rotates the 90 degrees through southeast to west, ending at the LaSalle junction with Randolph, forming a large, inviting plaza.

Other contextural goals, according to Jahn, were the attempt to embody governmental and monumental feeling while respecting the scale of the city/county building and contrasting with the Civic Center. While model photos collaged with site views give some idea what the result will be, its degree of success cannot be fully evaluated until the building is in place. Other aspects of the design which are key to the intended effect are more directly concerned with technology and the translation of materials into imagery.

It is on this level that the design dares the most, that it depends so heavily. Glass plays the major role, in fact plays several roles. For that matter, if it is built as designed, the building may combine more—and more imaginative—uses of various glass products than have been assembled before in any one building. There is the obvious use as building skin and skylight. But even the obvious is enriched by the fact that Jahn has called for a spectrum of glazing colors including clear, reflective, blue-gray, gray, and white. In all, the design calls for some 18 varieties of glass.

Glass and stone play games with each other on the base two floors, and it is these walls that delve fully into imagery. The 300-ft-long west arcade façade, built of stone in two colors, expresses a repeated keystone design. As the arcade reaches the west entry, it slips behind the columns, and the entry keystone is expressed in glass. When the stone arcade reaches the junction with the curved southeast wall, it seems to develop an inertia and





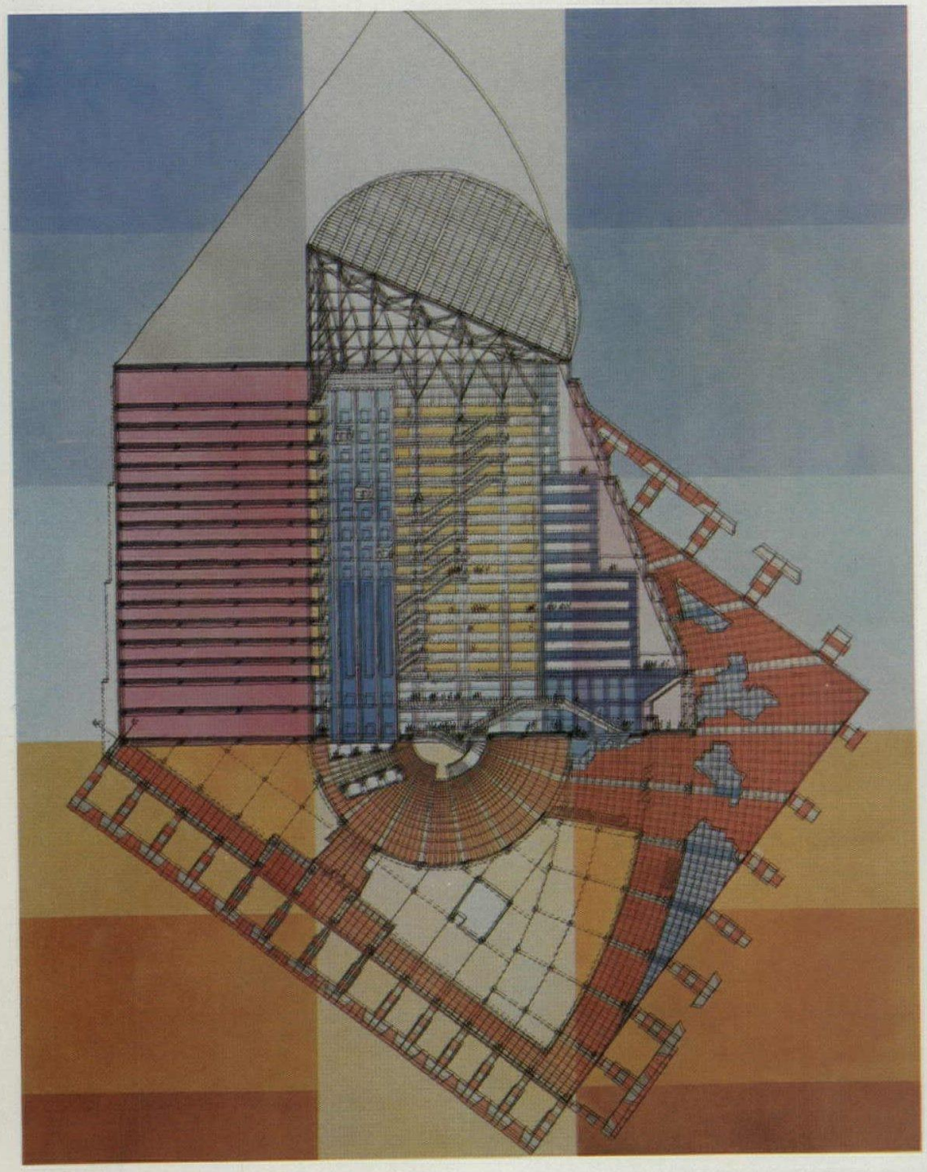
On north, east, and west façades, alternating 2'-6" vertical strips of glass will be reflective or opaque. The curved wall on the southeast (left) is a combination of clear and reflective. Stone at the arcade columns and keystones on the west turn the corner and march off tangent to the curve. Glass replaces it along the building arc, with glass keystones.

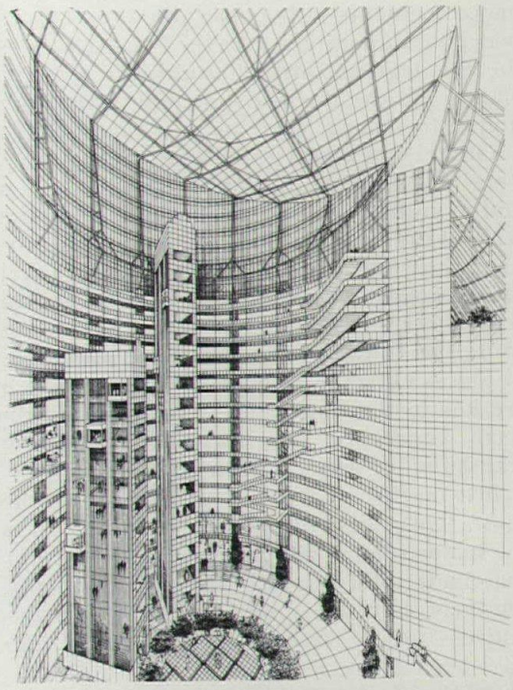
resolve of its own, marching straight on away from the building toward the LaSalle-Randolph corner. The farther the elements from the corner, however, the more diminished; and from this comes the modulation of the plaza's openness.

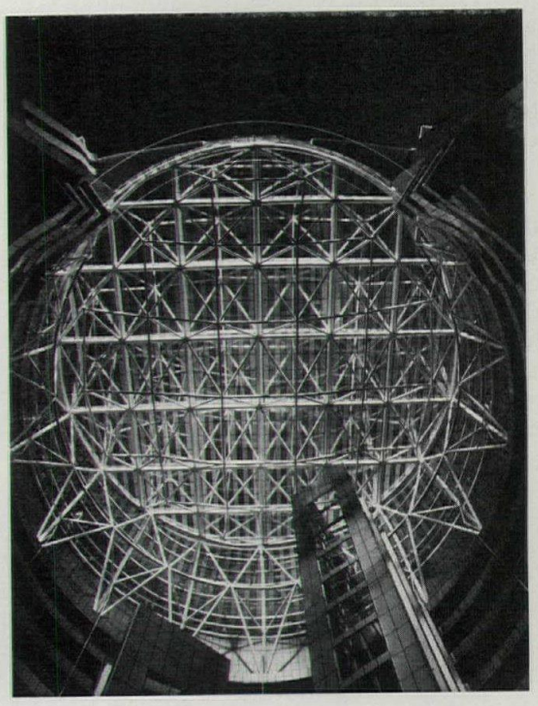
Other aspects—besides the spectacular atrium—which add to the richness are the free-form plaza composition, the soaring elevator cores, and the "clip-on" office-level walkways ringing the atrium, which call for glass block floors. If this design survives to completion, it may well accomplish what Jahn wants for it. Writing in the *Inland Architect,* Jahn states, "The State Center represents a new typology for an urban office building, synthesizing Modern, Late Modern, and Post-Modern concepts. In a time when architecture is the subject of a great theoretical debate, State Center takes a polemic position for appropriate and innovative recomposition of Classic and Modern principles of the building arts." If the facility reaches the goals set for it, and that is to be hoped for, it may embody an extremely interesting polemic. [Jim Murphy]

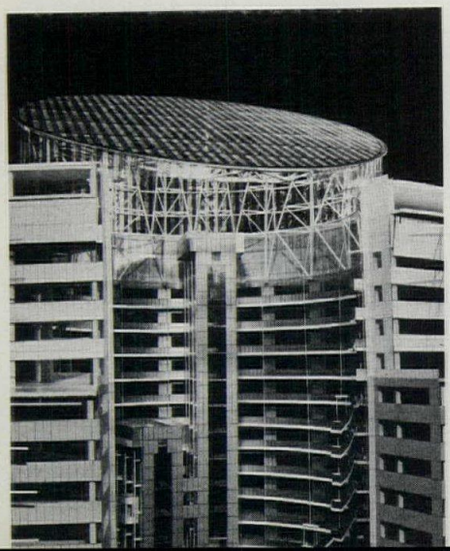
Credits

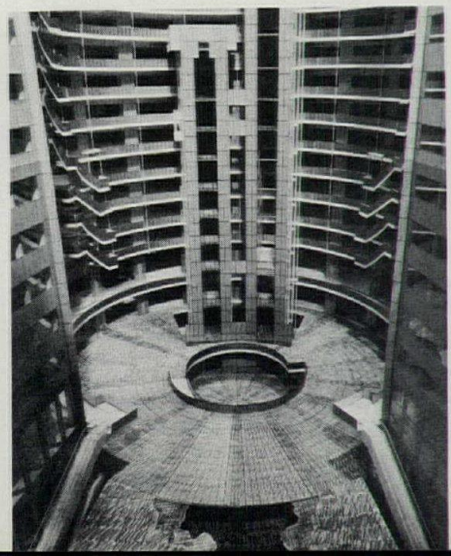
Architects: *C.F. Murphy Associates/Lester B. Knight & Associates in joint venture. Helmut Jahn, principal in charge; James Goettsch, project architect.*
Client: *State of Illinois Capital Development Board.*
Photography: *Keith H. Palmer and James Steincamp.*











Energy analysis

This analysis was prepared in the Center for Planning and Development Research, College of Environmental Design, University of California, Berkeley; Vladimir Bazjanac, Ph.D., Project Director. The work is funded by the U.S. Department of Energy.

The Illinois Center in Chicago is a compact building whose loads in the interior dominate the demand for energy. Significant energy conservation in this building can best be achieved through careful design of the mechanical system. Modifications in the design of the skin or the glazing system and changes in the operation of the large atrium have a relatively small effect on the building's energy performance.

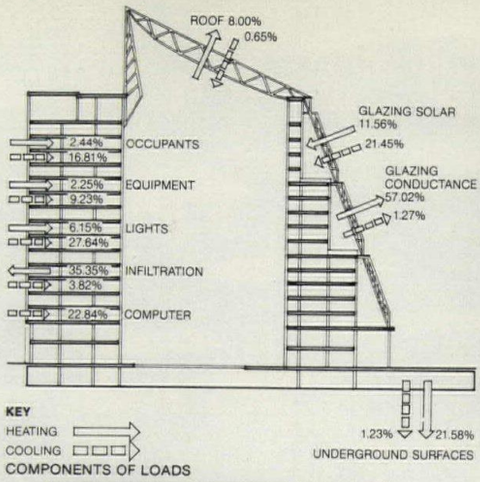
Electrical usage from artificial lights and user-operated equipment comprises one-half of the demand for energy in the building and contributes to the large cooling load. The cold climate in Chicago actually helps reduce the cooling load, and increasing the insulating value of the skin beyond double glazing is counterproductive. Design decisions that increase solar gain have a net negative effect on the overall performance. The building appears adequately shaded from the western sun by the surrounding buildings, and the use of interior blinds will further reduce the cooling load.

The atrium has a very low thermal mass. Its storage capacity is only 6.7 Btu per sq ft of glass. Therefore, if left unconditioned, the atrium would be subject to extensive overheating and undercooling. The unconditioned atrium, properly shaded and vented, however, could function as a cool heat sink: the offices dominated by internal loads could reject much of their heat into the atrium.

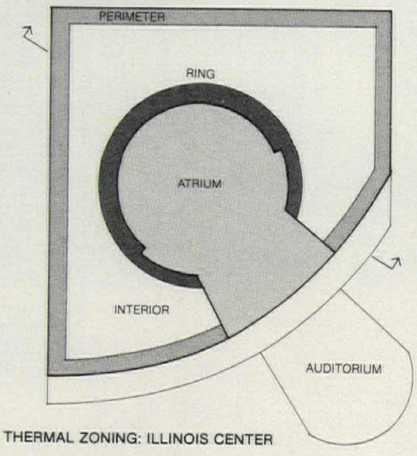
The glazing system is designed to change with orientation. It offers a satisfactory balance between the thermal loss and the use of natural light. Additional reflective glazing would increase the heating load more than it would reduce the cooling load; additional clear glass would substantially increase the cooling load.

The sloped façade and the stepping back of floors present an intriguing opportunity for a "double skin" (see Hooker Office Building, P/A, April 1980, p. 102). It could be achieved by glazing the openings at the perimeter of all office spaces behind the sloped façade. The minor role of the skin in the energy performance of this building, however, limits the effectiveness of the "double skin" to a less than two percent reduction in total load.

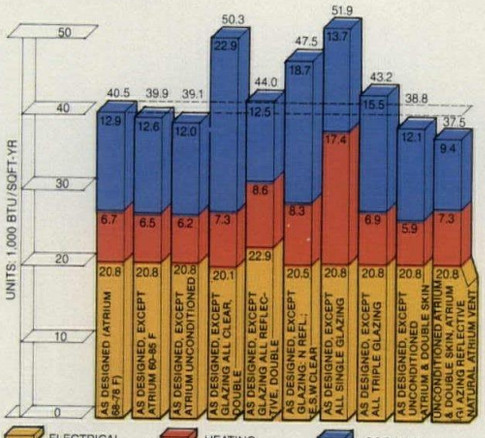
The greatest reduction of thermal loads by architectural modifications (7.7 percent in comparison to the building as designed) can result from the use of the "double-skin" reflective instead of clear glass in the atrium, and adequate ventilation of an unconditioned atrium. The annual temperature plot shows the range of temperature fluctuation in the atrium under these conditions. The probability for the temperature in the atrium to be between 68 and 78 F during any workhour of the year is 26 percent. This probability increases to 56 percent if the comfort range is extended to 60 to 85 F.



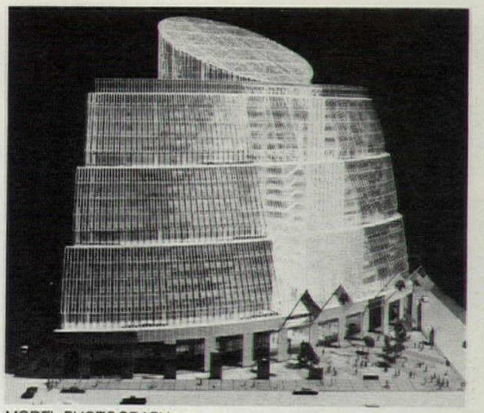
COMPONENTS OF LOADS

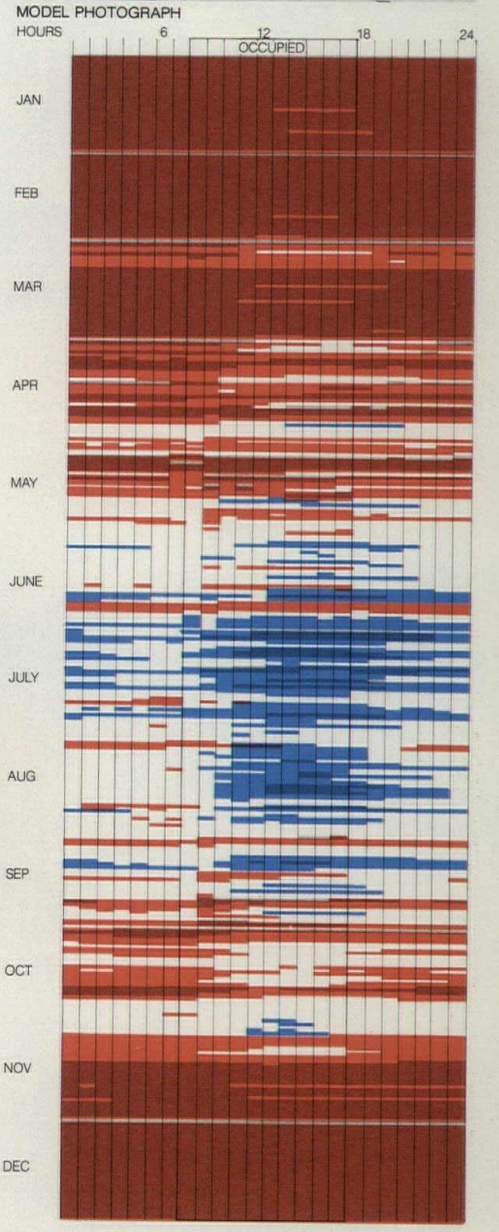


THERMAL ZONING: ILLINOIS CENTER



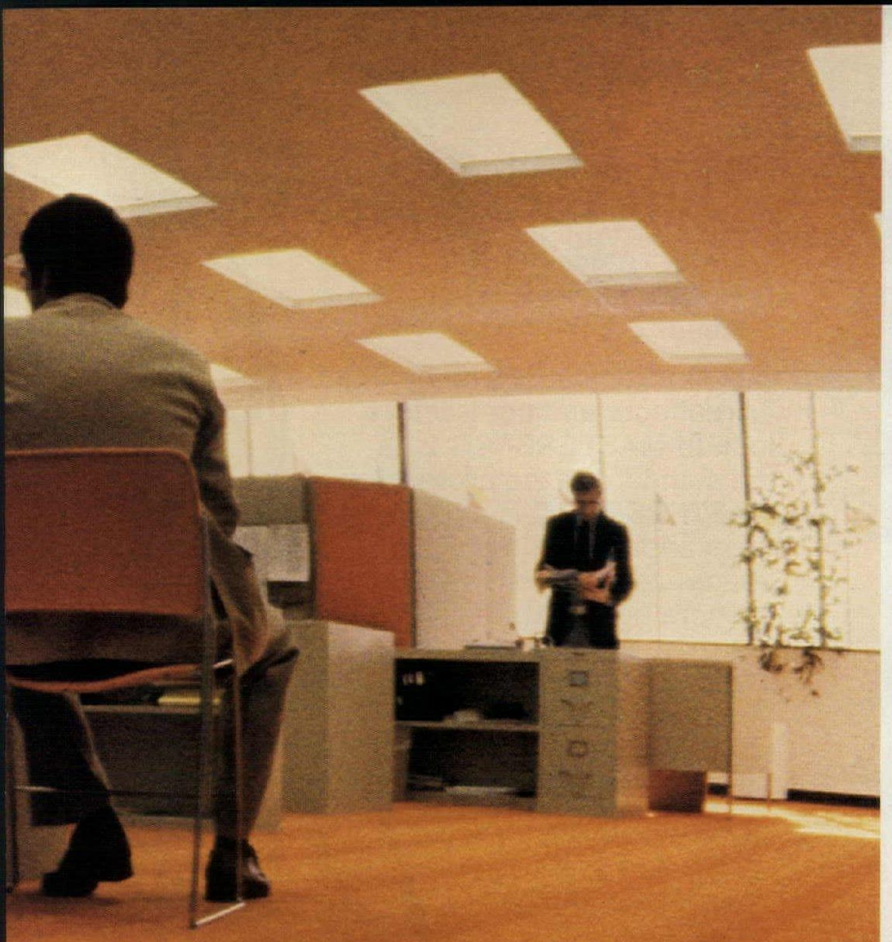
COMPARISON OF ANNUAL ENERGY PERFORMANCE


MODEL PHOTOGRAPH



TEMPERATURE FLUCTUATION IN UNCONDITIONED ATRIUM (AS REDESIGNED)

The analysis of the energy performance of this building does not include the performance of the mechanical systems in the building. It is based on annual simulations with DOE-2.1, using custom weighting factors. Its accuracy is limited to the accuracy of DOE-2.1 in representing the building's thermal behavior and does not necessarily conform to all of the details of the actual performance of the existing building (P/A, April 1980, p. 100). A detailed report is available upon request.



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Organizing your information resources

William T. Lohmann

A new incentive for organizing reference literature has emerged. It seems that professional liability problems thrive in the chaos found in most offices.

The Specifications Clinic column in the July 1976 issue of P/A spoke of "drowning in the rising tide of information." It is hoped that no one has actually succumbed in the intervening years, but the tide is still swelling and practitioners must learn to cope with it.

The situation is the basis of a recent book commissioned by the AIA Research Corporation and the National Bureau of Standards. Titled *The Architect's Access to Information,* it was reviewed in the *AIA Journal* in July 1979. In its pages, Charles Hamilton Burdette analyzes the need for organization and forecasts changes in attitudes and work patterns. Asserting that a single practitioner can no longer possess all required knowledge, the author states that "professional judgment is therefore increasingly dependent on direct access to information and to the appropriate techniques for applying it."

Burdette suggests that such access "is increasingly recognized as an important way to reduce exposure to liability claims." In today's practice, claims are often based on improper use of products and materials and on ignorance of pertinent legislation, such as occupational safety and barrier-free design regulations. Both reflect reliance on inadequate or outdated information, which is naïve if not negligent.

In its February 1980 "Communiqué," the Design Professionals Insurance Company also finds acquisition and control of information increasingly important to professional practice (and increasingly difficult to achieve). It identifies three vital resources: people, capital, and information. Referring to an "era of information overload," it points out that industry standards and product catalogs are rapidly outdated, easy access to past records has become essential, and search time for reliable information is mounting. DPIC suggests obtaining specialized expertise in grappling with the problem.

The 1976 P/A article is a beginning. Product literature, codes, reference documents, periodicals, and project archives are still the basis for most office information systems. Facilities still vary from a simple drawer file to comprehensive libraries with full-time personnel. The "Uniform Construction Index" (and CSI's new "Masterformat") have been affirmed during the last four years as industry-wide standards for filing product data.

A 1979 report by Kathleen L. Kalt on a survey of 45 established professional libraries is also useful. "Organizing and Managing Information in Architectural, Engineering and Consulting Firms" was sponsored by the *Professional Services Management Journal.* In the process of documenting office routines, priorities, and sample forms, the report highlights the tremendous variety of workable information systems. All libraries in the survey controlled books and magazines, half of them maintained current manufacturers' literature, and half kept job-related data. Many libraries also included slides, drawings, specifications, photographs, audiovisual aids, and product samples.

Obviously, no single system is necessarily "right" for all applications. Kalt concludes that a professional library *should* be unique, tailored to meet the firm's individual needs. She also makes it clear that "money is better spent on a librarian than on a library." The real need is for someone who can organize information within the office and know where to look for outside resources. Through careful nurturing, the library will build itself. She recommends a professional librarian with a degree in library science.

The PSMJ findings on the diversity of informational systems, incidentally, are echoed by James M. Anderegg, library consultant to many major American architectural and engineering firms. He approaches entrenched work patterns as "givens." Subtly superimposing a degree of control and coordination over them, he sometimes finds it sufficient to place responsibility for existing systems in a single person. Instead of a professional librarian, Anderegg prefers a person without preconceived ideas on what a library should be but with a demonstrable ability to organize details, a degree of patience and diplomacy, and sufficient common sense to make value judgments when necessary.

Most firms struggle with a haphazard approach to information management. They are unwilling to devote budgeted time and money to it. Burdette suggests, however, that in the future practitioners will recognize the costs of maintaining information, hiring more specialized personnel, and using more complex equipment as directly related job costs. And maybe even be reimbursed for them by the client. □

William T. Lohmann, AIA, FCSI, is Specifications Manager for C.F. Murphy Associates, Chicago.

Your solution or your leak

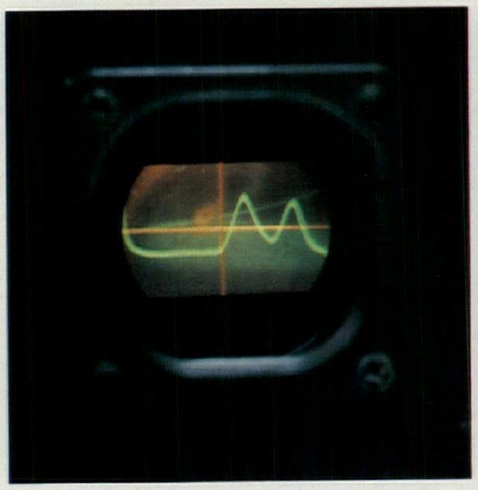
A dry building is a major goal of human habitation. A leaking one is a nuisance, an embarrassment, and a costly ill to cure. Water is the foe, and a carefully designed and executed seal is one good friend.

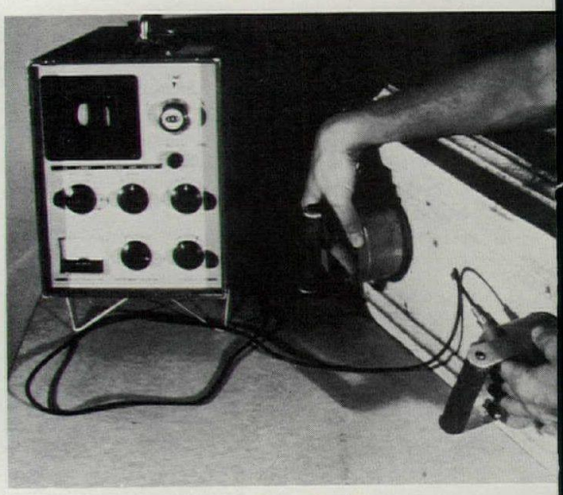
At a distance, a building gives the impression of being a rigid, fixed-in-place, constant element of the environment. At close range, however, it interacts with its environment and adjusts itself into balance with its external conditions. The building deforms and oscillates in the wind, expands and contracts thermally, and wages a constant physical and chemical war with moisture and sunlight. Its surface is dynamic. The never-ending periodic onslaught by the elements can patiently erode the skin of any building and eventually defeat it. The construction and maintenance of the building determine how long the process will take. The architect, in his decision-making process, is unconsciously selecting the weapons nature will use to cause the deterioration.

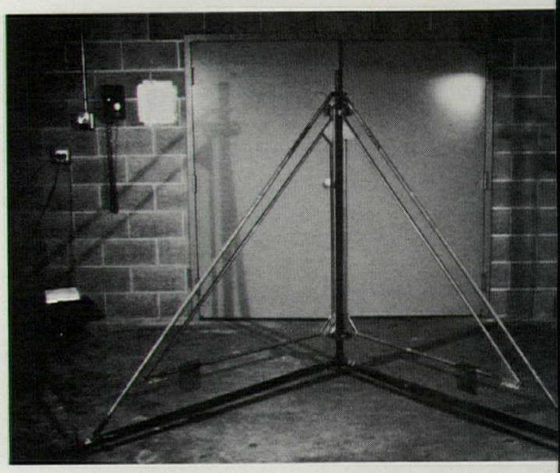
Weakness or flaws in the surface of a building may present themselves as discoloration, stains, bulges, or cracks. A leak demands the most immediate attention. If the owner is fortunate, the leak will reveal itself. If not, an internal leak could lead to oxidation, freeze-thaw problems, shifting surfaces, or eventually even structural failure.

The increasing number of such problems in recent years has fostered a segment of the building community that specializes in "sick" buildings. These "building doctors" learn their trade primarily from practical experience, but may emerge from any facet of the building community.

New York building failure consultant Peter Corsell began with a chemical background in the manufacturing of waterproof sealants and membranes. His consulting practice started with the Sears Tower in Chicago. One of his current projects is keeping the Chrysler Building in New York from shedding its brick façade. Says Corsell, "All I have been doing for 30 years is looking at sick buildings." Corsell also practices preventive medicine. He will design, detail, and specify to prevent failures from occurring and offers an inspection service. He explains, "My eyes are looking only at the waterproofing."



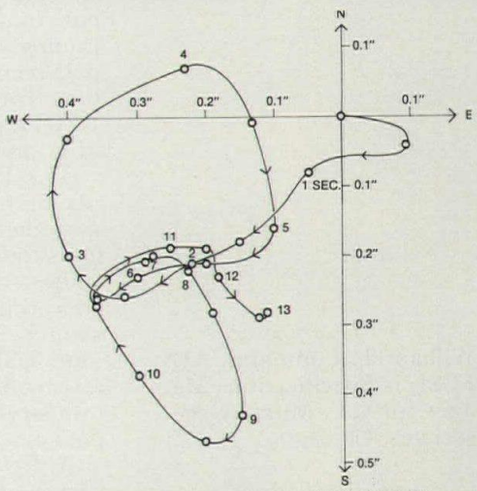




The soniscope is a device that can be used to locate internal cracking, a possible path for water migration (above). An oscilloscope is used to monitor the device. A tilt meter (right) is a device used to monitor building sway. Output from a rooftop reading of a tilt meter is shown below. Photos: Wiss, Janney, Elstner & Associates.

Robert J. Capazzi is the president of Jobin Waterproofing. Jobin is a large sealant and waterproofing contractor based in Farmingdale, NY. One current job for Jobin is the new IBM building in New York by architect Edward Larrabee Barnes. Three years ago, however, Capazzi formed a new company, RJC Associates, Inc. After years of experience installing water protection, Capazzi now offers his services to others. In his words, "You have to combine analysis and practicality on the spot." Capazzi's services can be obtained to ensure that the waterproofing design and the waterproofing reality are one and the same.

The giant in the field is Wiss, Janney, Elstner & Associates of Northbrook, Il. The company investigated over 850 buildings last year, has three offices, and



TILT METER READING: HIGH RISE BUILDING IN CHICAGO

employs 105 people. Over half of the employees are construction professionals, 8 of whom are architects. The firm emerged 20 years ago when the three founders, Jack F. Wiss, Jack R. Janney, and Richard C. Elstner, merged for their first job of quality control of concrete. The research background of the men soon led to the construction of an extensive laboratory solely for the purpose of analyzing construction technology. The firm has the capability to investigate, field test, and document failures as well as make recommendations for repair and furnish the design and inspection of that repair. Jerry Stockbridge is vice president of the company and an architect. He expresses the company attitude: "We bend over backwards not to make any superficial decisions; we test extensively."

The "doctor's bag" encompasses a broad range of instrument sizes and accuracy. A good building failure specialist can tell how effectively a stone facing is attached by simply tapping its exterior with a sounding hammer. More precise instruments can be attached to the building at various points to monitor its movement over time. Highly sophisticated metal detectors and sonic devices provide information about the hidden condition of stone, concrete, and steel. Occasionally the inspection even requires the specialist to cause artificial "rain" on a wall or to test an existing portion of curtain wall for performance in wind. What cannot be learned from on-site inspection or field testing is then brought back to a laboratory where mockups can be constructed and chemical analysis performed.

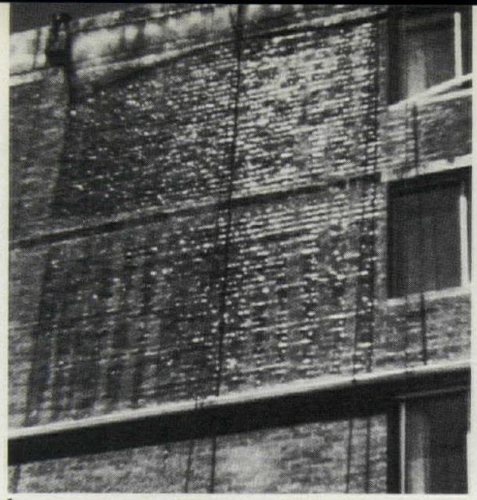
Whether a building needs a bandage or major surgery depends to some degree on the care or negligence that is applied during its use. The ingenuity of the building design and the skill with which it is built have a major foe in the genius of water.

How does a leak behave?

Moisture within the building can take a number of different forms. A thin film of water can condense on a cold surface and grow into droplets. Droplets become trickles, sheets, and puddles. If not actively or passively removed, the water can stain, cause mildew, rust, and rot to name just a few ill effects.

How the water travels into the building depends to some degree on the construction materials involved. A porous material, for example, initially may absorb the water. Continued wetting will eventually cause saturation and "wicking" from one side of a wall or slab to another. Gravity takes over after saturation, and causes the water to follow the path of least resistance, vertically down.

Wind can drive rain through an opening horizontally or create pressure that will cause the water to be sucked into a



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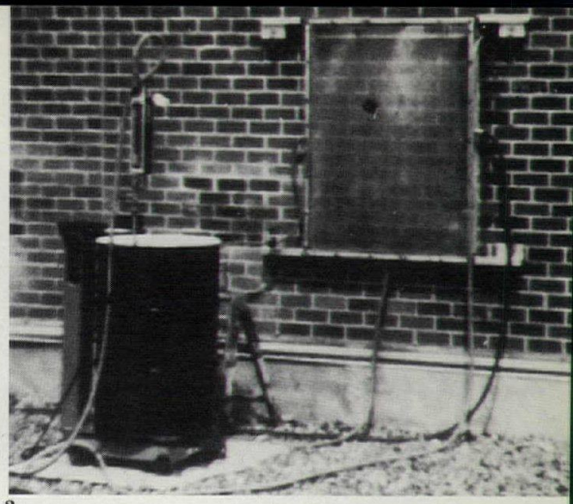

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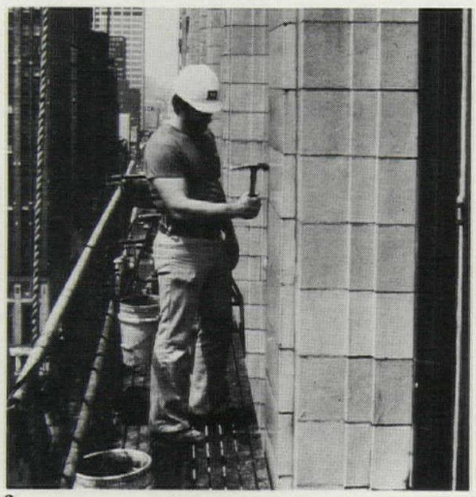

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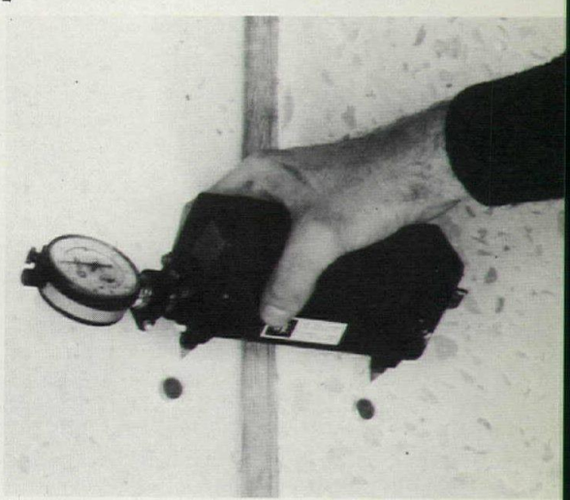

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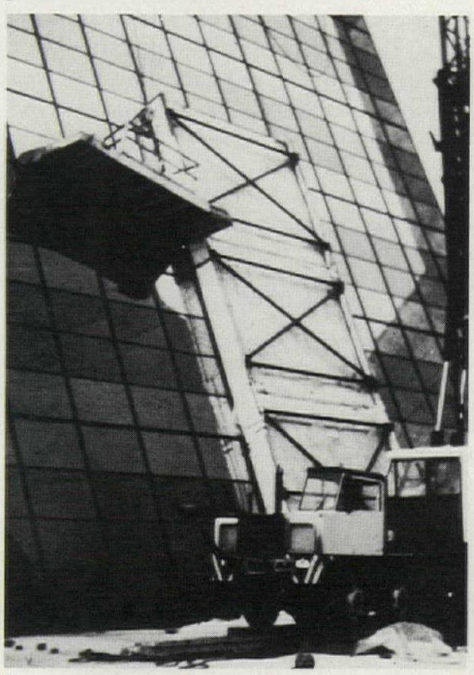

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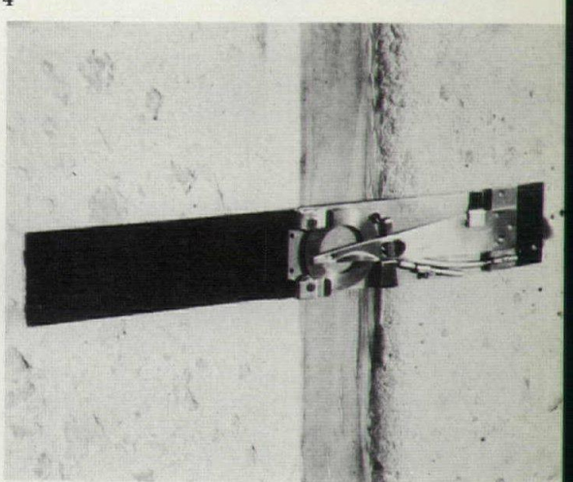

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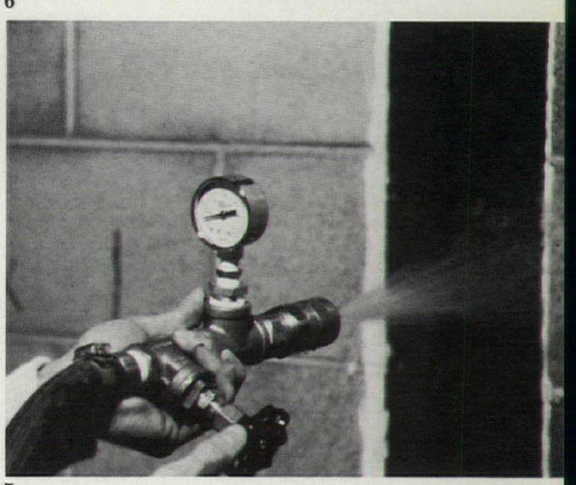

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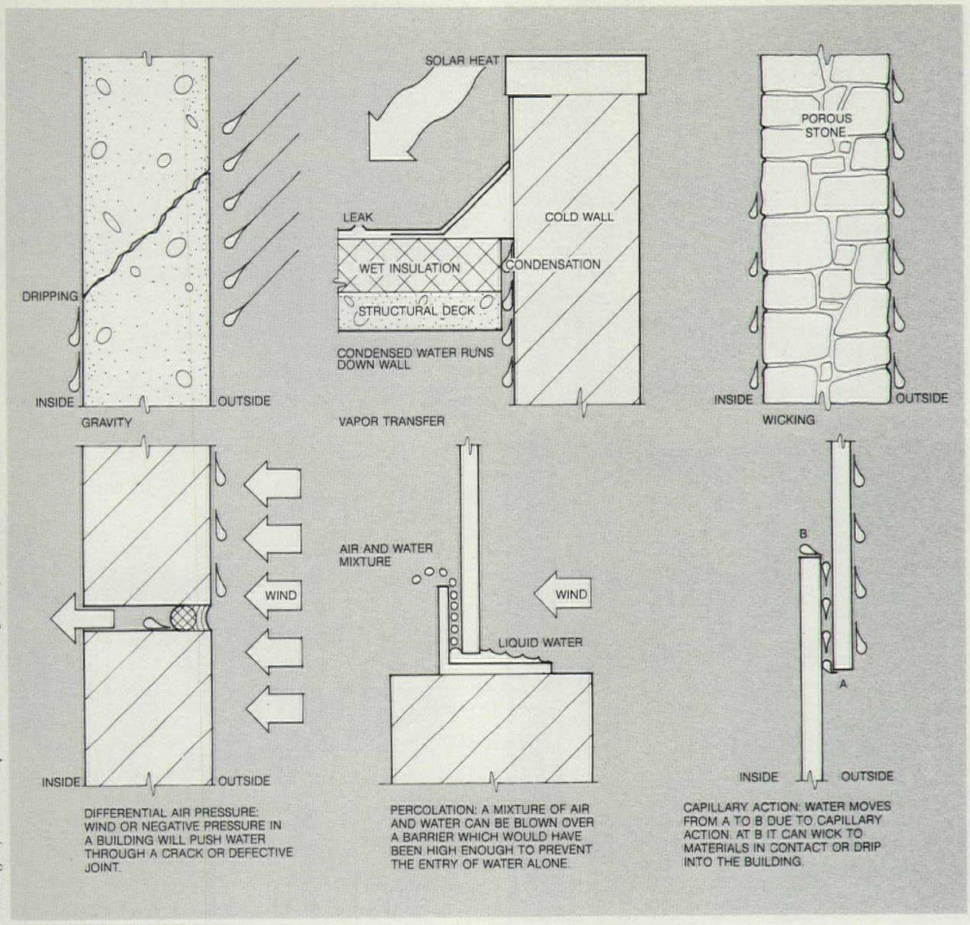
1 Bar spray is used for evaluating the watertightness of large areas of wall surface. 2 Water test frame used on masonry for simulating a rainstorm with high winds. 3 A simple sounding hammer can be used to locate internal cracking or adhesion problems. 4 A Whittemore gauge is used to measure joint movement as the change in distance between two points. 5 Vacuum frames can be built to induce lateral loadings. 6 The scratch gauge can monitor joint movements unattended. 7 A calibrated solid cone hand-held spray can be used at specific locations of suspected leaks. Photos: Wiss, Janney, Elstner & Associates.



Drawings by P/A in cooperation with Wiss, Janney, Elstner & Associates

MECHANISMS OF WATER ENTRY

*Poor joint design or sealant application can cause the sealant to fail. At right, **1** Sealant adhesion failure due to inadequate joint size. **2** Sealant completely squeezed out of sill joint too narrow to accommodate the expansion of adjacent masonry. **3** Cohesion failure of sealant due to vertical movement of adjacent panels. **4** Adhesion failure due to improper installation of backer rod. **5** Popular but ineffective remedy for leaking joints. **6** Adhesion failure to window frame caused by unclean surface at time of installation.*

building. The low-pressure side attracts water from the high-pressure side. A mixture of wind and air can act like a percolator and push water up and over a barrier.

The apparent attraction of water to itself allows it to defy gravity and actually move upward. Capillary action occurs between close-fitting, smooth sheet materials, such as glass.

A temperature differential tends to concentrate water on the cold side of a material, but usually won't have sufficient strength to pull water through a crack. Of course, a high temperature will cause the water to evaporate and may transport moisture from place to place. The expanding force of freezing water is one of nature's strongest weapons.

In addition to its own means of transportation through a building, water can be very effective for transporting other materials, either in solution or suspension. Efflorescence in brick masonry is an example, where salts are transported by water. A leak in today's buildings is not just letting water into the building; it is quite likely passing on acid rain. Road salts transported in wet snow tires similarly cause deterioration of parking decks.

Where does the water go? With a demonic regularity, moisture finds its way to the insulation under a built-up roof or within the faces of an exterior wall. Some insulation is well suited for the task and soaks up all of the water it can, ruining its insulating properties.

High performance seals and sealants

Given the degree of difficulty an owner has in finding the exact cause of his building problems, the devious character of water and its ability to find a way into the building, and the scale of headache that a leak can be, one would think that the procedure to avoid this situation in the design and construction stages of a building would be clearly delineated and rigidly upheld. In the case of high-performance building seals and sealants, this is not yet true.

Architect Charles Parise of Detroit's Smith, Hinchman & Grylls has been chairman of ASTM Committee C-24 on Building Seals and Sealants for eight years. For the last five, the committee has been laboring over its Recommended Practice for the Use of Elastomeric Sealants. The document is expected to be in print by November 1981. Parise explains: "We are just starting to reach the point where the procedure is available." Committee C-24 consists of 170 people and 28 subcommittees whose members include designers, manufacturers, and contractors. Parise continues: "It takes a long time to get the whole industry to agree."

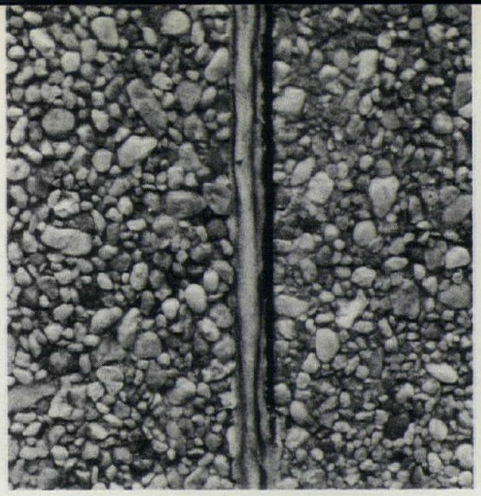
The Sealant & Waterproofers Institute (SWI) will hold its fifth annual meeting next month in Boca Raton, Fl. Membership in this organization is restricted to manufacturers and installers of sealant or waterproofing materials. There is an SWI committee currently in session writing a manuscript in joint design for use by the industry.

The manufacturing community takes its lead from national specifications. For elastomeric sealants, Federal Specification TTS-227E applies to two-part sealants and TTS-230C is used for one-part sealants. TTS-1543A is also applicable to one-part silicone sealants. ASTM C 920 applies to both single- and multi-component elastomeric sealants and is expected to supersede the previous Federal Specifications. It encompasses all chemically curing sealant compounds. Manufacturers are permitted to test their own products to meet these specifications.

Why joints fail

Assuming the sealants actually applied to building joints comply with the national standards and that these standards and test procedures coincide with the actual building conditions, there are only two generic places where mistakes can be made: the design stage and the application stage of construction.

Peter Corsell attributes design flaws to "a glaring cavity in architectural education." Many manufacturers agree. The architect must be ignorant of good joint design. Why else would he make the joints so thin? As Parise puts it: "The smaller the joint, the larger the problem." Says Robert Capazzi, "Most architects do not have practical field experience." Wiss, Janney, Elstner's Jerry Stockbridge points the finger at what he calls "interface breakdowns" between the architect and his engineers and consultants. Ignorance, inexperience, lack of communication, and nonchalance seem to be at work. Charles Parise is quick to add: "Architects don't have a monopoly on causing sealant failures. The whole industry is to blame. The architect relies on the manufacturers to supply him with the proper information and the applicators to install materials correctly."



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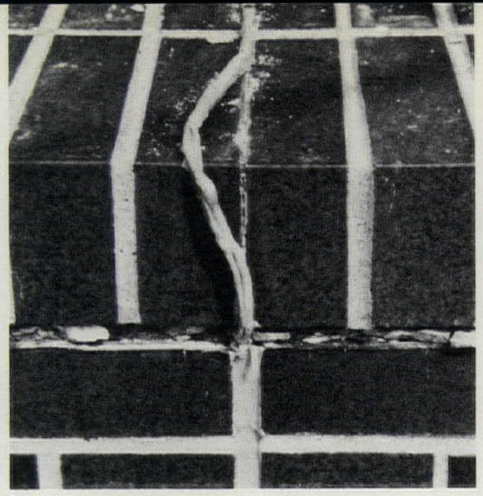

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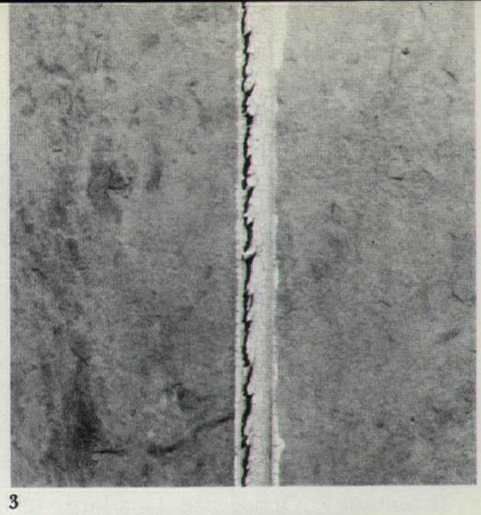

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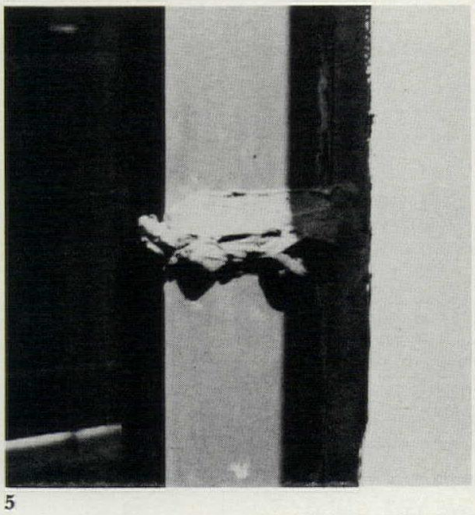

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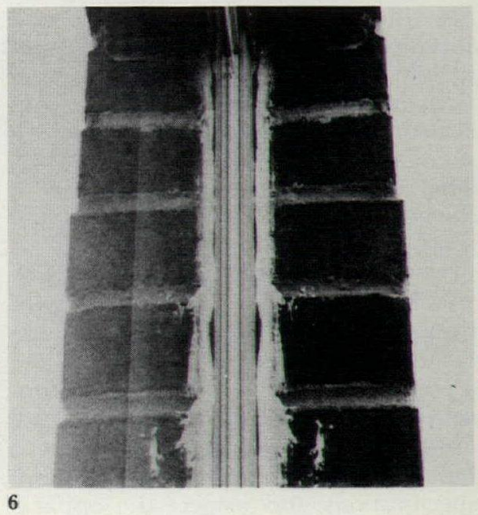

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Photos: Wiss, Janney, Elstner & Associates

What about the application? Robert Capazzi attempts an explanation. "Most applicator firms have no theoretical technical capability. An applicator with no theoretical technical knowledge applies the material regardless of tolerance discrepancies." Knowing how to use a sealant correctly is not a prerequisite to buying sealant materials. There is no industry-wide training program for applicators. Coring or slump testing, so common in the concrete industry, is unheard of in the sealant field. There is no such standard site-testing procedure for sealants.

There are very few architects and applicators who would be willing to be characterized as above. Each person operates within a framework of safety in which he feels comfortable. The design and construction of a building is a constant vigil. What is more likely the case is that people have the total responsibility of the joints without having total control. There are several dilemmas involved with joints:

Dilemma 1: Sheer numbers. There are hundreds of joints in even a small building. All of them change dimension during the course of time. The more different materials used on the façade, the more complex is the movement and the more demanding are the requirements on the sealants.

Dilemma 2: The joints are small. In spite of their number, the joints are a very small part of the building in dimension, time, and cost to construct. On drawings they are idealized as single lines until they reach the detail stage. Their design comes at the end of a long chain of decisions, all of which usually are conceived of as being more important than the joint and sealant decisions.

Dilemma 3: How many. One could make the decision that by reducing the number of joints, one reduces the possibility of human error in placement. By reducing the number of joints, however, the units that are being sealed get larger. The larger the unit, the more it expands and contracts, thermally, structurally, and from moisture; thus more stress is put on the sealant, and the joints must increase in size. If we increase the number of joints, reducing the movement and the joint size, we increase their total number and the possibility of human error.

Dilemma 4: Building size. The taller the building, the more general the joint is asked to be. On a 40-story curtain wall, for example, the same joint is detailed for the second floor as for the fortieth. This joint is the same on all sides of the building and is maintained towards the corners or the center of the faces. We know that the wind pressures are varied on the façade. We realize that the surrounding buildings or climatic factors may cause a dominant rain direction, and surely the sun will warm only certain portions of the façade at one time. We also are aware that taller buildings today are lighter and more flexible than ever. The accuracy of predicting the precise deflection or oscillation is great when compared to the height of the building, but it is considerably less when compared to dimensions as small as the joints.

A large building also presents the possibility of installing the sealant on various sides in different weather conditions; this means that the actual application might be accomplished in a precarious location, increasing the incentive to place the sealant hurriedly and reducing the probability of inspection.

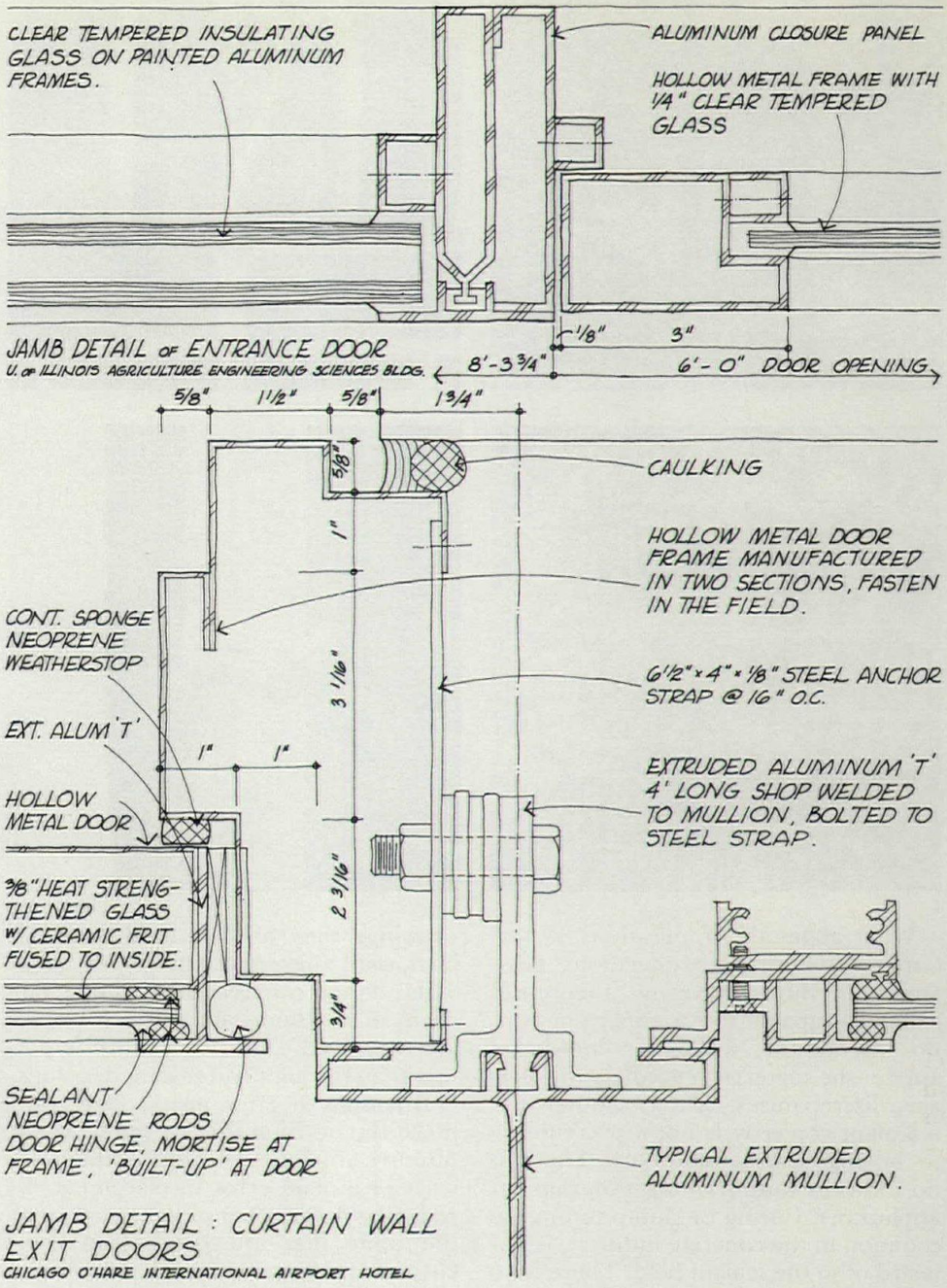
Dilemma 5: People. Decisions that affect the joints are made constantly in the design and construction process. The designer who first draws the joints affects their design through their spacing and location. The precaster or stone cutter affects the joint with his accuracy of sizing. The steel erecter controls building tolerances on a large scale. In the whole string of people who have an effect on the final joint placed in the building, there are usually only one or two who completely understand the interrelation between the theoretical design and the actual on-site application of the sealant.

Dilemma 6: The real design. Under optimal conditions, the person who designs the joint and recommends tolerances initially has no knowledge at all of the precise tolerance that will actually

exist at the site the day it is installed. Nor is he aware of the exact temperature, condition of the joint, or skill of the applicator. By contrast, the applicator, who may meticulously clean the joint surfaces and apply the sealant, has no idea what precise factor of safety has been incorporated into the joint nor has he the technical theory for double checking the reality with what is designed.

Dilemma 7: Office size. In a large office, the job captain, draftsman, and specifications writer are all different people and most likely in different locations in the building. For a large construction, the architect's representative is engaged full time at the building site. The common thread in the decision is the job captain. The person with the most detailed sealant knowledge is probably the specification writer. The specification writer is not often informed when a change of dimension is reported and rarely visits the site. When a redesign is called for, he is rarely consulted. Large offices and buildings do, however, frequently have the budget to hire consultants to check their plans and specifications and inspect the application of the sealant.

In a small office, it is conceivable that a single individual does all of the designing and inspection, eliminating communication problems. This may mean that a specialized and intricate knowledge of sealants is unlikely. The time to delve into the subject is limited. The budget will not permit a joint consultant or inspector, and site inspection has to be worked into the rest of the designer's working day. The best answer for these situations is simplicity, no tricks, no fancy materials or joint design.



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Let the experts do it

Given these seemingly irreconcilable dilemmas, anyone who decides to play the joint game had better expect a stacked deck. Two excellent tools to combat such odds are either an extraordinary amount of luck or a large body of experience coupled with eternal vigilance. More and more architects are turning to the latter in the form of a consultant. On occasion, the owner might also make the decision to seek help. Others are employing the performance specification and letting the manufacturer contribute his expertise.

If a consultant is used, there is always a question of how much he should do. He may be called in to review the details and specifications created by the architect, or he may be asked to check the manufacturer's suggestions. More and more frequently, the consultant is given the entire task of creating the joint design and the specifications.

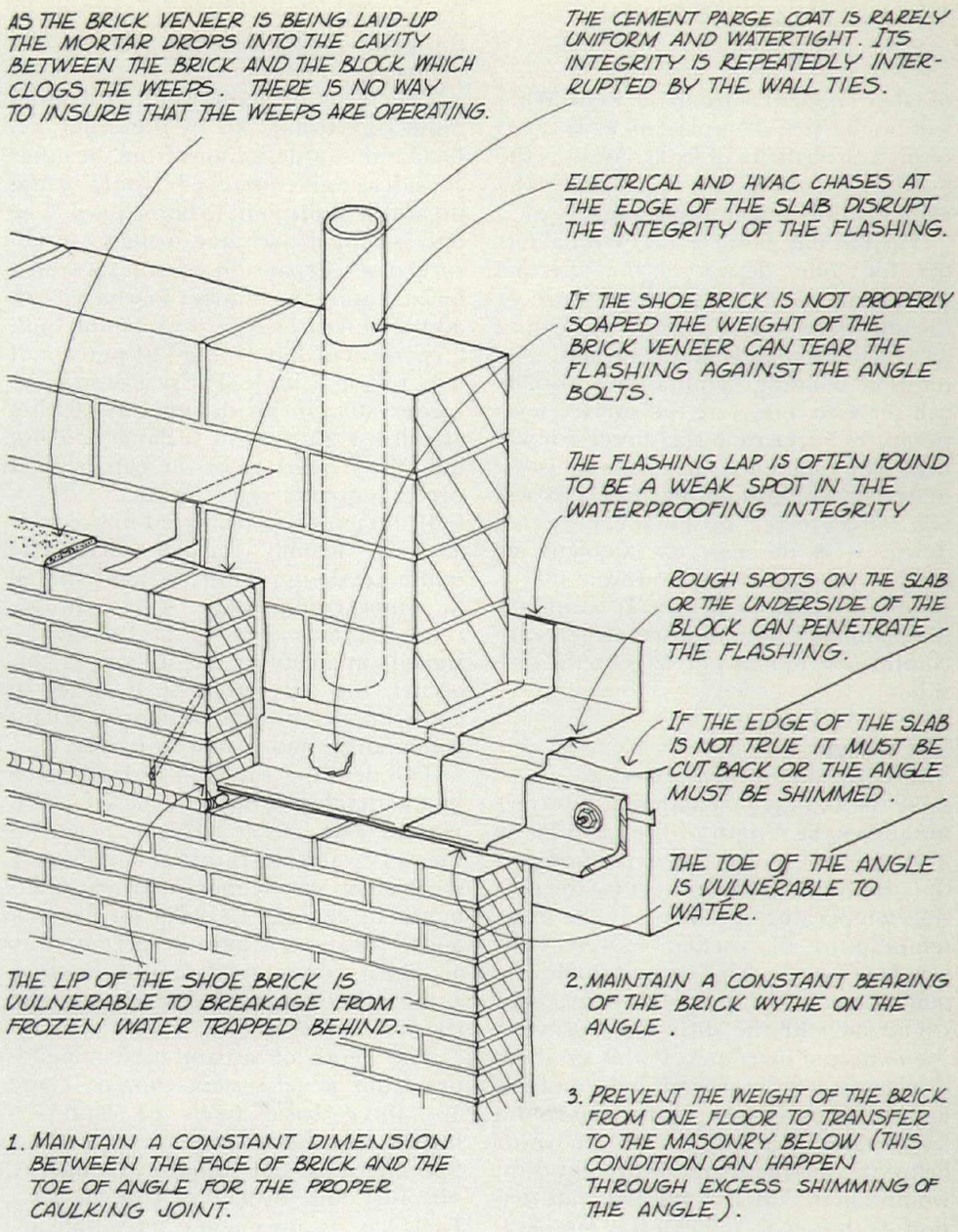
When a consultant is used, the result is a specific design that, it is hoped, optimizes the joint performance. A performance specification is different. For a curtain wall, for example, only broad guidelines are given by the architect about the exterior and interior profiles and surface conditions. A feasibility study is done by the designer to guarantee that the dimensions are within reason. The competing curtain-wall manufacturers then design the exact configuration of the mullion and joints based upon what is convenient and available to them. The manufacturer will most likely increase his bid somewhat for this service.

The two methods stress different advantages. With the consultant, the joint design is optimized, but the manufacturer may have difficulty meeting the specifications. If the performance method is used, the architect is assured that he is getting optimal manufacturing and erecting conditions, but may not get the optimal joint.

Why is it so hard?

The joint design may look easy at first glance. All of the materials are predetermined except the sealant, and the only difficult number involved is the width of the joint. Let's look at the kind of considerations which can affect the joint design.

At left, the two details represent the difference between a curtain wall designed over a decade ago by the office of C.F. Murphy with prescriptive specifications (below), and a detail that accompanies performance specifications for a more recent building (above). The performance specification includes primarily joint profile and appearance. At right, Peter Corsell illustrates the interrelationship between various aspects of cavity wall design. The movement in an active building joint is affected by a wide variety of seemingly unrelated decisions.



PROBLEMS OF CAVITY WALL CONSTRUCTION

One would expect the joint designer to consider the normal deflection characteristics of the building under load. The larger the elements to be sealed, the more influence these normal building deformations have on the joint design. What is more difficult to determine is the shrinkage that may take place in a structure when it eventually dries, the creep that occurs over time, or the settling of foundations. Certain materials are more prone to these problems than others.

The elements that compose the joint may be dependent upon structural movement or independent of it. Most of the time, the panels or elements are free of the structure and are themselves unrestrained. They support only their own load.

Once the support framework is understood and the support system of the elements has been chosen, the joint must be examined. If stone cladding is used, the fabrication technique employed must be investigated and the surface condition noted. A large job may use several different stones having slightly different properties to present to the sealant. Fabrication methods may also cause potential tolerance problems.

With the precast concrete cladding, two difficulties are frequently mentioned. The most serious is the failure of contractors to remove the form release agent from the surfaces to be sealed. Corner joints can also mean trouble where mitering or lapping is sometimes attempted. A separate solid precast corner unit is recommended, allowing joints to occur some distance from the corner.

Masonry cladding involves a clear understanding of masonry construction procedures. Some of these issues are illustrated above. Also of great importance is the swelling and shrinking which take place from exposed walls constructed of highly absorptive brick.

In contrast to brick, stone, and concrete, metals do not absorb water, and they involve a wide variety of surface treatments. Some of the surfaces might require sealant primers and others not. The seal that involves metal generally involves another type of material as well, whether it is glass or some sort of cladding. All must work together. Occasionally, for example, a protective coating is used over glass during construction to avoid contact with concrete or mortar. When the time comes to seal the glass and its metal frame, the coating is still on the glass and ruins the seal.

The tolerances inherent in each kind of construction are a very important consideration. What is the normal tolerance expected? How is alignment achieved? How much room is there for correction? Ironically, preconsideration of such issues can work against the solution. If, for example, a window frame incorporates a built-in stub to catch the sealant back-up rod, the joint around the window must fall within the required widths. If the joint is larger, the sealant may need to extend farther into the joint, and the stop for the back-up rod will actually be in the way.

How will the sealant be applied? If there is a double-seal "rain-shield" solution, it is particularly important to consider how the interior seal is applied. If the sealant is applied from the inside, continuity is very difficult to achieve around columns and floor slabs which block access. The cost of the installation will reflect the experience and amount

of labor needed to install the joint. What will be the cost of replacement in areas of high probability of leaks? What is the building type, and how much risk to the contents does a leak represent?

The last but most critical external factor for joint design is the thermal movement. The actual temperature of the substrate will determine the extent to which it expands and contracts. The interior building temperature usually will serve to moderate the surface temperature. Surfaces in the direct sun will heat up, especially dark-colored ones. Materials with a high thermal mass will take longer to heat up and longer to cool down. It is the external ambient air temperature gradient, however, that is commonly used in design. It is simpler to obtain, and most industry experts are comfortable that any error is on the safe side.

The design

The equation normally used to determine the change in length of a substrate multiplies the length of the material by its coefficient of thermal expansion and then multiplies this product by the outside temperature gradient. If the exact temperature of installation were halfway between the highest and the lowest temperatures, the temperature gradient would be half the difference between the expected extremes. If this gradient were used for the design, failure of the joint is almost certain. If the installation takes place at a temperature above or below the middle temperature, the joint would fail in either compression or tension. If, however, the exterior temperature gradient is taken to be the entire range from the expected lowest to the highest, all of the possible temperatures of installation, from cold to hot, are protected.

The most common type of joint used today is the butt joint. Sealants are available today that have the capability to expand and contract as much as 50 percent. Class A high-performance elastomeric sealants have the capability of expanding plus or minus 25 percent of their joint width. That is, a nominal 1-in. joint can expand to 1¼ in. or contract to ¾ in. Standard recommended procedure would then equate 25 percent of the joint width needed and the total change in length of the substrate. Solving this equation for joint width effectively multiplies the change in length of the substrate by four.

This equation assumes that the materials on either side of the joint are the same and that the length used in the equation is the sum of half the length of the building elements on either side of the joint. It also assumes that the elements are unrestrained.

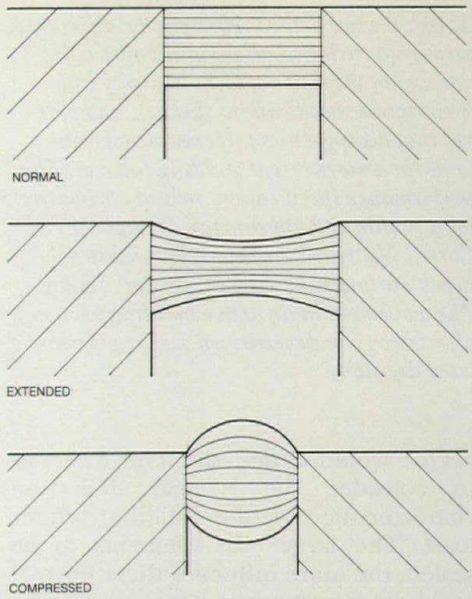
The resulting joint width is a minimum dimension. All of the other deformations or deflections from the other considerations discussed would cause the width of the joint to be *increased*. The only way that the same sealant can absorb more expansion or contraction is by increasing the number to which it can add or subtract 25 percent. Simply put, 25 percent of 1 in. is ¼ in.; 25 percent of 2 in. is ½ in. Charles Parise is even more conservative in his design. Says Parise, "I call for 25 percent sealants and use only three-quarters of the capability. I prefer a greater safety factor."

If the joint is constructed imprecisely and is actually smaller than the minimum design width, the joint can fail in either compression or tension because the movement will exceed the designed capability of the sealant. If this occurs, the only recourse is either to correct the joint width or to use a sealant with a larger movement capability.

The depth of the joint is determined by the depth at which the backer rod is placed. The backer rod also performs the very valuable functions of shaping the sealant and keeping it from adhering on three sides. In order for the sealant to function, it must be permitted to act like a rubber band. It must be stuck at the two edges and free to expand and contract at the center.

The depth of sealant used depends upon the actual sealant chosen. There are three basic types of high-performance sealants that meet the Federal Specifications: polysulfides (the oldest), silicones, and urethanes (the newest). Each has its advantages and disadvantages.

Two-part polysulfides and two-part urethanes offer complete color range capability while the silicones are restricted to a preset range of a dozen or so colors. Silicones, however, show excellent resistance to ultraviolet light and cure very fast. Some sealants cannot be used on concrete, marble, and certain metals. Others are more generally compatible with all substrates. Urethanes are very strong in areas of high abrasion. And so on. Most specifiers can relate the difference between silicone, urethane, and polysulfide, but are not able, for example, to recall at will the differences between the various types of silicone sealant. This kind of information is found in the manufacturer's published literature. It is also available in ASTM publications.



JOINT MOVEMENT AND SEALANT REACTIONS

Example: A 30 ft. concrete precast panel in Toronto. Concrete has a thermal coefficient of 6.5 x 10^{-6} in/in/°F and Toronto will go from -30° F to 130° F on a south wall.

Total movement = Thermal coefficient x length in inches x temperature gradient =

$$\frac{6.5}{10^6} \text{ in/in/°F} \times 30\text{ft} \times 12\text{in/ft} \times 160°\text{F} = .374 \text{ in.}$$

Percent movement = Total movement divided by joint size x 100
If a ½ inch joint was planned the TOTAL percent movement (expansion + contraction) =

$$\frac{.374 \text{ in}}{.5 \text{ in.}} \times 100 = 74.8\%$$

If a joint is sealed on the hottest day of the year (it's possible) then the joint will only see expansion and very few sealants can tolerate 75% expansion as a cyclic occurrence. If one looks at the 75% total movement and thinks ±37.5% and that a ±50% sealant will work easily in that joint, he has to insure the sealant is installed in exactly a ½" joint and at 50° F and then there is very little room for the human factor that occurs. The rule of thumb is that a sealant rated to move ±50% (Class A Canadian Spec 19—GP-9M) should be used in a joint whose *total* movement is calculated at 50%. This gives the insurance factor if the joint isn't installed perfectly. Similarly, a sealant rated at ±25% movement (Class A U.S. Spec TTS-00230C or TTS-001543A) should be used in a joint where the *total* movement is rated at 25%.

The U.S. Army has a very helpful rule of thumb in their *Manual on Sealing and Caulking*. It gives this formula:

$$\text{Minimum Joint Width} = \frac{1}{\text{Movement Capability of the Sealant}} \times \text{Maximum Joint Movement Expected}$$

Using the above mentioned building in Toronto as an example and a ±25% (Class A) sealant:

Total expected movement of panel (from calculation) = .374 in.

Movement capability of sealant in a single direction = 25% = .25

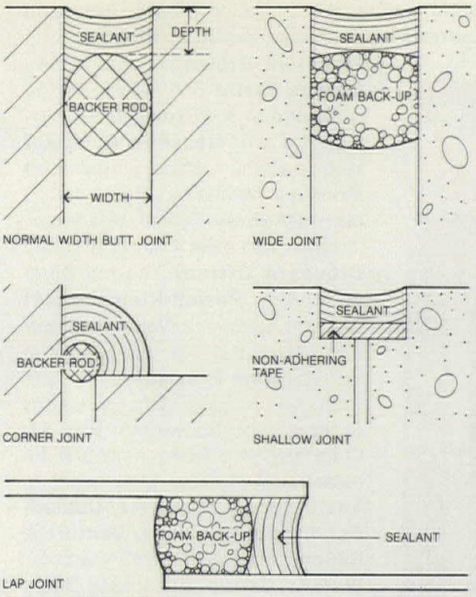
$$\frac{1}{.25} \times .374 \text{ in.} = 1.5 \text{ inch joint.}$$

Thus a 1.5 inch joint is desired.
If a ±50% low modulus silicone is used:
Total expected movement of wall panel = .374 in.
Movement capability of sealant = 50% or .50

$$\frac{1}{.5} \times .374 \text{ in.} = .75 \text{ inch joint.}$$

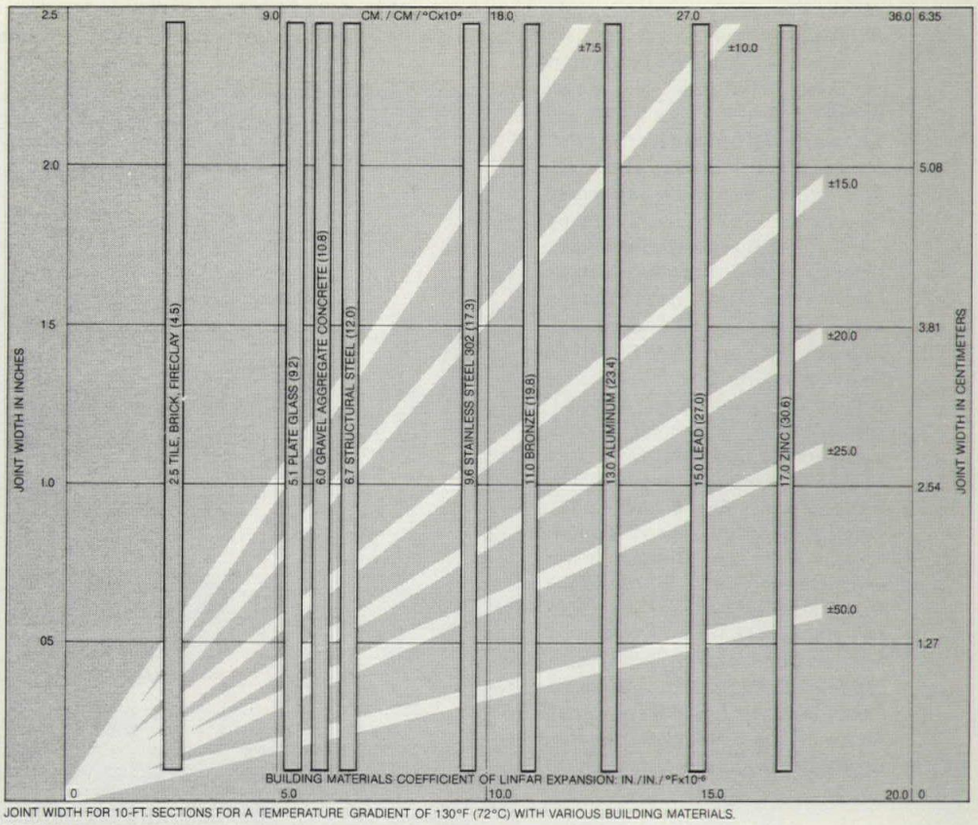
Thus a ¾" wide joint is desired.

Courtesy Dow Corning



TYPICAL JOINT DESIGNS

The key to the effectiveness of a joint is the understanding that the sealant must be free to flex. It must not be adhered at three sides. The joint width must be accompanied by a thorough understanding of the expected movement so that the sealant will not be over-extended or excessively compressed. How much the joint will thermally expand and contract is dependent upon the material chosen, its color, and its coefficient of thermal expansion. At right, industry experts have formulated a table for determining approximate joint widths. These widths, of course, do not take all types of possible building movement into consideration.



JOINT WIDTH FOR 10-FT. SECTIONS FOR A TEMPERATURE GRADIENT OF 130°F (72°C) WITH VARIOUS BUILDING MATERIALS.

RECOMMENDED JOINT WIDTH FOR VARIOUS SEALANT MOVEMENT CAPABILITIES

Once the selection is made of the sealant that gives the most desirable properties for the situation, the depth of the joint can be considered, and the first design is complete. It is called the first design because the final design will most likely occur on the site of the building just before the sealant is applied.

The real design

On-site control is usually limited. The seal may fail because an installer had grease on his hands when he placed the architectural element. Perhaps the worker accidentally spilled a soft drink on the area to receive the sealant, and the sugar remained to spoil the adhesion to the joint. Maybe the surface was simply wet from rain the night before. One consultant recalls a building containing 400 apartments where 250 of them leaked. It is possible that the sealants were installed below the recommended temperature and they did not cure properly. Perhaps the sealant in the caulking gun was too stiff and actually pushed the backing rod deeper into the joint, causing a thicker seal.

One of the biggest problems in joint design is that the joints are not clearly defined. "All joints should be drawn full size," says Charles Parise. "The width, depth, and tolerances should be included." He continues, "Then there is no question what is expected of the contractor."

The most common problem is tolerances. Robert Capazzi explains: "What generally happens is the construction tolerances result in changes in designed conditions. If the joint is not built to the drawings, we will attempt to change the joint design. The joint redesigns itself in the field." Capazzi continues: "Anticipating what could happen is a key factor."

If anticipation fails, there is always field testing. "Because there are so many things that can go wrong," Parise reasons, "a field test ought to be made prior to installation. Five feet of sealant should be installed for all concerned parties to inspect." Proper inspection of joint conditions by a qualified person prior to sealant application is also critical to any successful joint. The other equally important step is to have the expertise available to redesign the joint. When the joint is completed, it's your solution or it's your leak. [Richard Rush]

Acknowledgments

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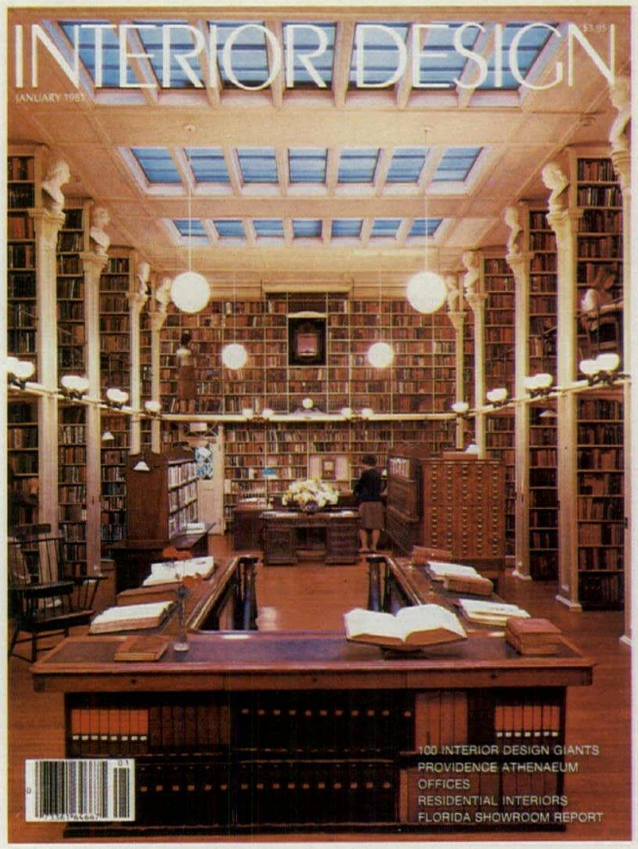

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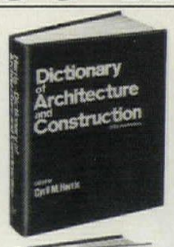

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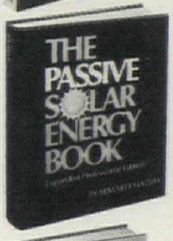

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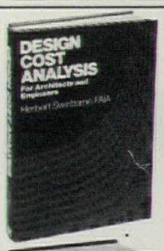

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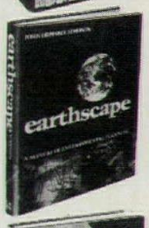

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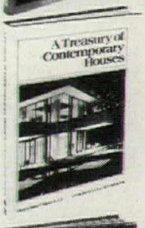

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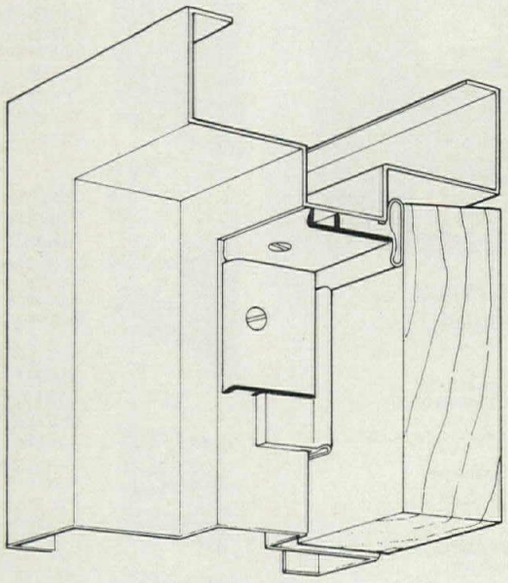

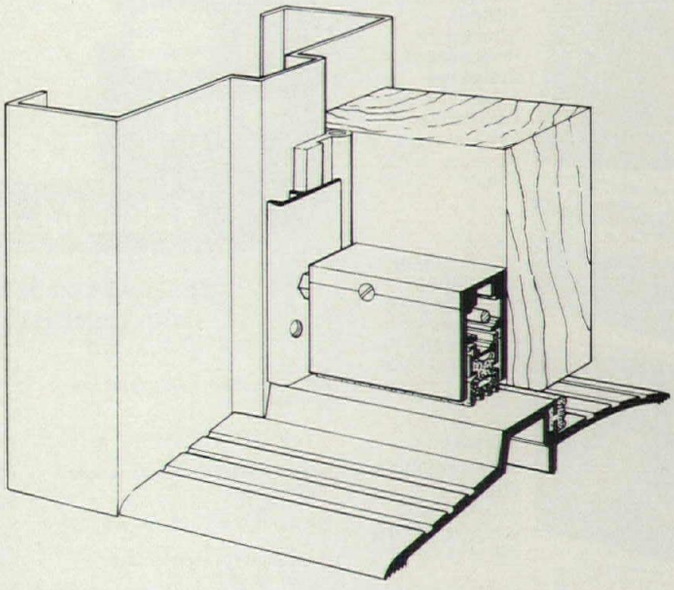

In winter, cold outside air infiltrates buildings.

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Zero now offers a way to eliminate such problems. We do it with one of our Air-Stop Door Systems.

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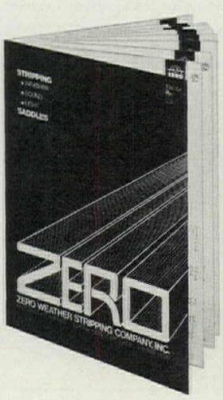
The results of these tests appear in our current catalog. If you'd like one, just drop us a line.



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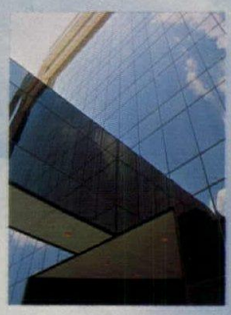

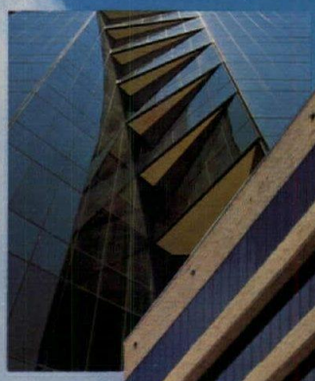

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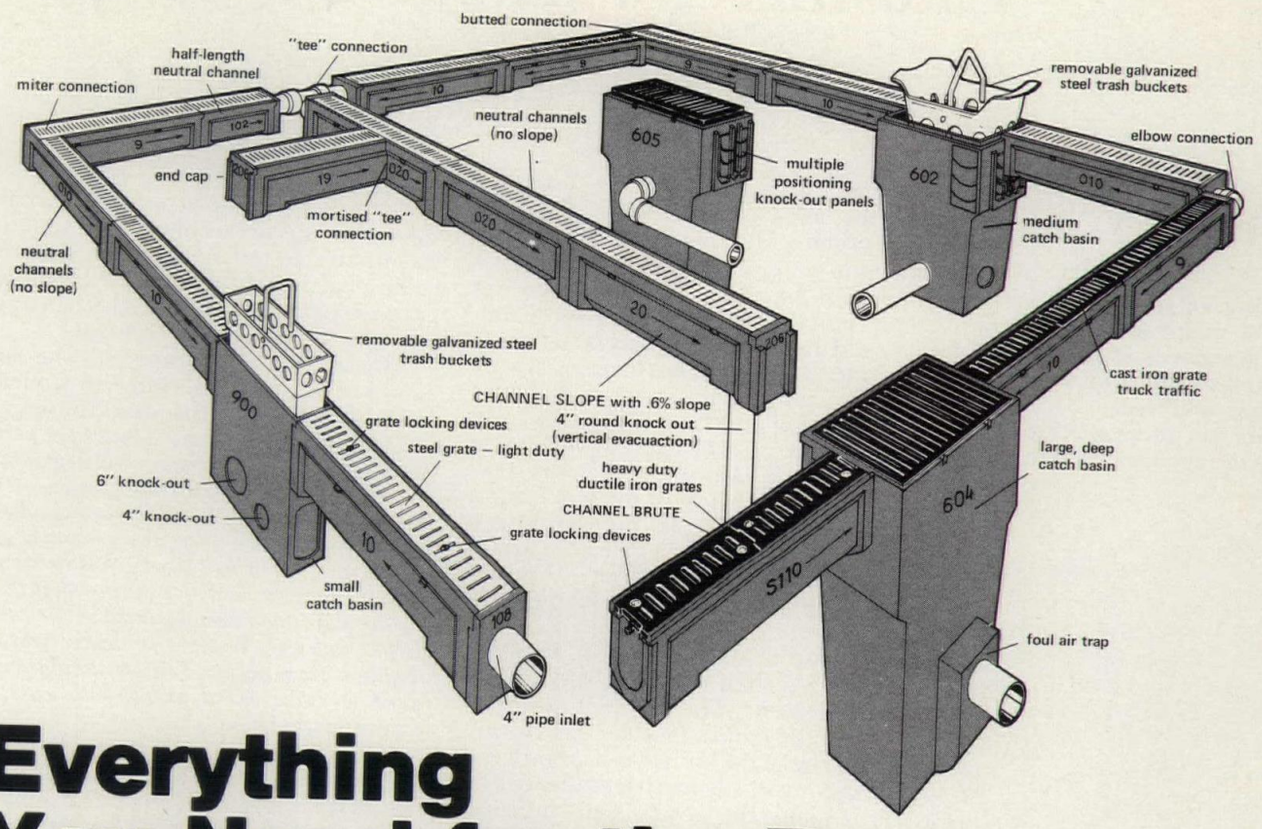

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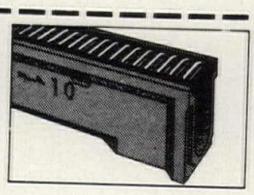

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Liability for alleged negligence

Norman Coplan

Determining an architect's liability for malpractice is based on standards ordinarily expected of the profession. Owner/architect agreements can increase the liability if the architect is not wary.

Although the legal parameters of potential liability for architectural malpractice continue to expand, the general standard by which the performance of an architect is measured has remained relatively constant. To avoid liability for alleged negligence, an architect must satisfy the standard that in performing his architectural function, he has employed at least that degree of skill and care ordinarily used by members of the architectural profession at such time and in the locality in which the services were rendered. Typical of the application of this standard of care in determining a claim of negligence asserted against an architect was the decision of the District of Columbia Court of Appeals in *Noble* v. *Worthy,* 378 A. 2d 674.

The *Noble* case resulted from the fatal fall of a 22-month-old child from the balcony of a fifth-floor apartment. The accident occurred at a time when the child's mother was visiting a friend, and the child, unnoticed, wandered out to the balcony of the apartment leased by the friend. During the period that the child was out of the view of his mother, a neighbor saw him on the exterior of the balcony, holding on to either the floor or a rail. Before the neighbor could reach the apartment to report the danger, the child fell to his death. No witness knew how the child had gotten outside of the balcony. The mother of the child sued the architect who designed the building for negligence in connection with his design of the balcony and also sued the owner of the building for negligent maintenance.

The balcony from which the child fell was a typical enclosure, consisting of two large panels, some vertical bars, and one horizontal bar each on the top and bottom. The distance between the bottom rail and the floor was 6¾ in. and the distance between the panels and the floor was 6½ in. The distance between the vertical rails ranged between 5 and 5½ in. The rail was over 42 in. high. The child's height at the time of the fall was 28 in.

In respect to the claim against the architect, the primary issue was whether his design satisfied a standard of performance which would exempt him from liability. In this connection, the architect testified that there were no building code provisions which contained any standards for designing balconies and that customarily, architects designed vertical balcony railings to be 6 in. apart. Another witness, Chief of the Engineering Section of the District of Columbia Department of Housing and Community Development, who had been the Chief of the Structural Section when the building's plans were submitted for a building code compliance review, testified that the code contained no provisions for balconies not projecting into public space, and that the building plans had been found acceptable by the reviewing structural engineer when submitted. He also indicated that reviewing engineers normally exercised their individual judgments on whether the distances between horizontal balcony railings were safe, because there was no set norm.

Plaintiff's only witness on architectural standards was an architect who stated that he was unable to testify as to any generally prevailing balcony safety standards. However, he gave his own opinion that the balcony, as designed, was unsafe for children.

The trial court dismissed the action as against the architect, and the Court of Appeals affirmed this dismissal, stating:

"Architects are held to a standard of performance which requires them to employ that degree of skill and care of that used by their colleagues. . . . Plaintiff's only witness on architectural matters admitted that he could not testify as to any generally prevailing standards of safety in balcony construction. In contrast, the defense evidence showed that the prevailing standards had been satisfied in the construction of (the) balcony. Without evidence indicative of a deviation from accepted safety standards, plaintiff failed to make out a prima facie case of architectural malpractice."

Although there was no evidence that the balcony's condition had deteriorated or changed in any way since the building was constructed, the jury awarded recovery to the plaintiff as against the building owner, apparently premised upon the theory of negligent maintenance of the balcony. The Court of Appeals in this instance, however, reversed the trial court and also dismissed the action as against the building owner. The Court said:

"The defendant's duty as landlord was to provide a healthy and safe dwelling. It was bound to exercise reasonable care under the circumstances. . . . Landlord's duty of reasonable care does not require him to foresee all possible dangers. We are unable to conclude that defendant was bound to anticipate that a 22-month-old child might be allowed to play on a fifth floor apartment balcony without adult supervision, or even casual observation, for a couple of minutes. The record contains no evidence whatsoever as to how Kushan (the child) fell; illustratively, he could have climbed on the chair which had been left on the balcony and gone over the railing. Since plaintiff introduced no probative evidence suggesting negligence (relying simply on the occurrence of the accident) she failed to make out a prima facie case. The jury impermissibly was left to mere speculation as to the cause of the fall."

Since, under prevailing law, an architect does not warrant the perfection of his design, but undertakes only to exercise due care as measured by prevailing architectural standards, he should be wary about language contained in a proposed architect-owner agreement which would charge him with a higher standard. □

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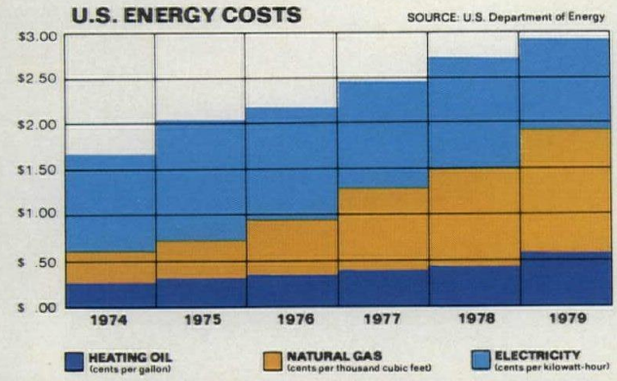

$1,839 Annual Savings in Chicago.

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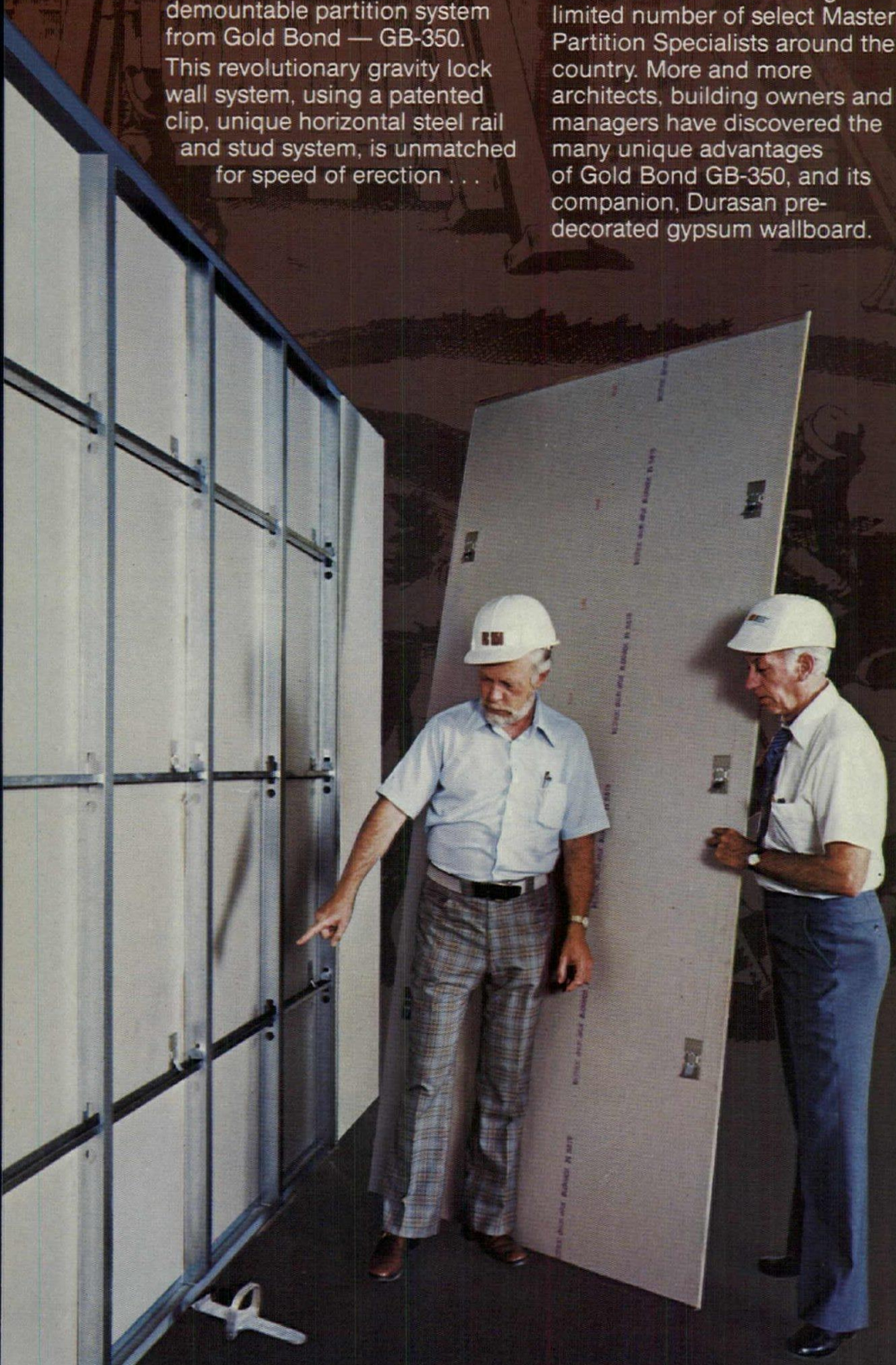

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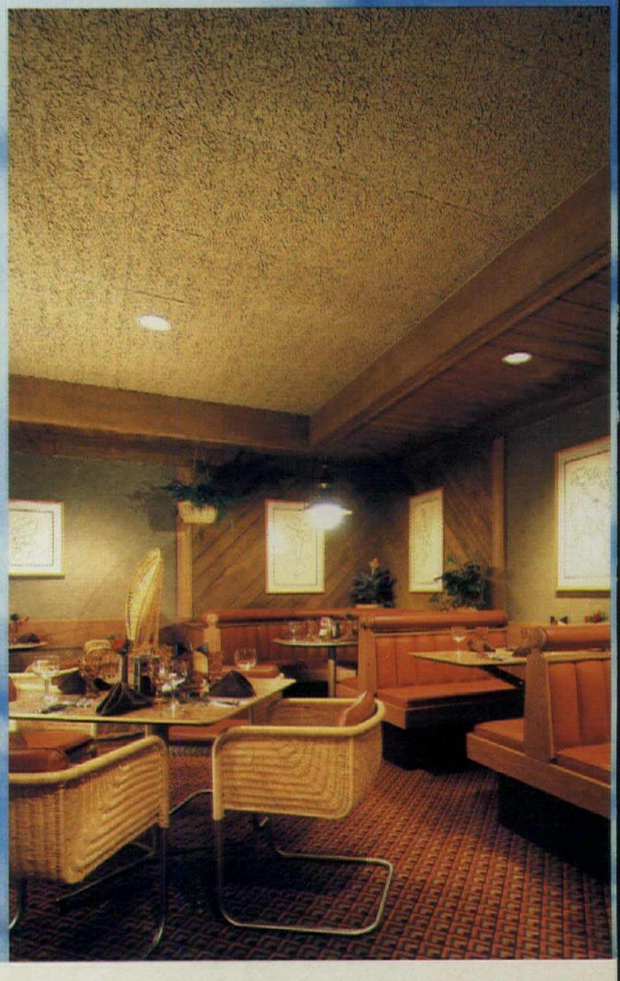
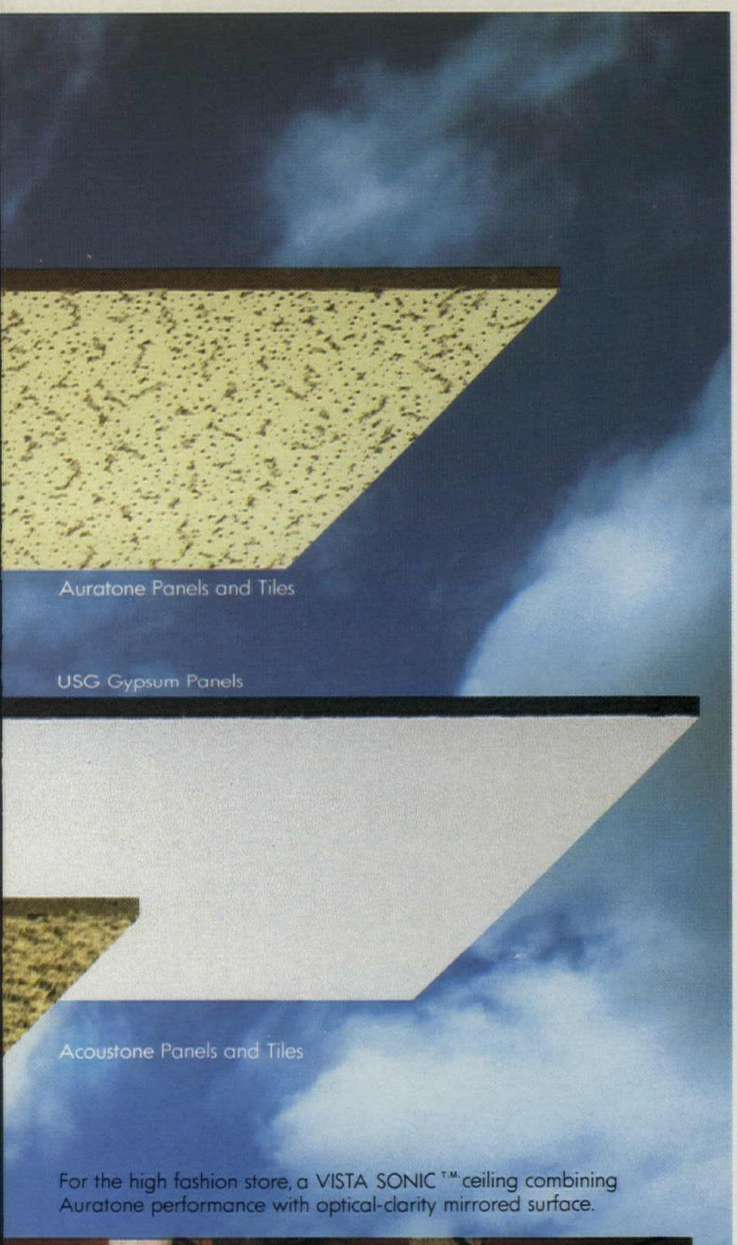


Acoustone ceiling in dramatic earthtone.



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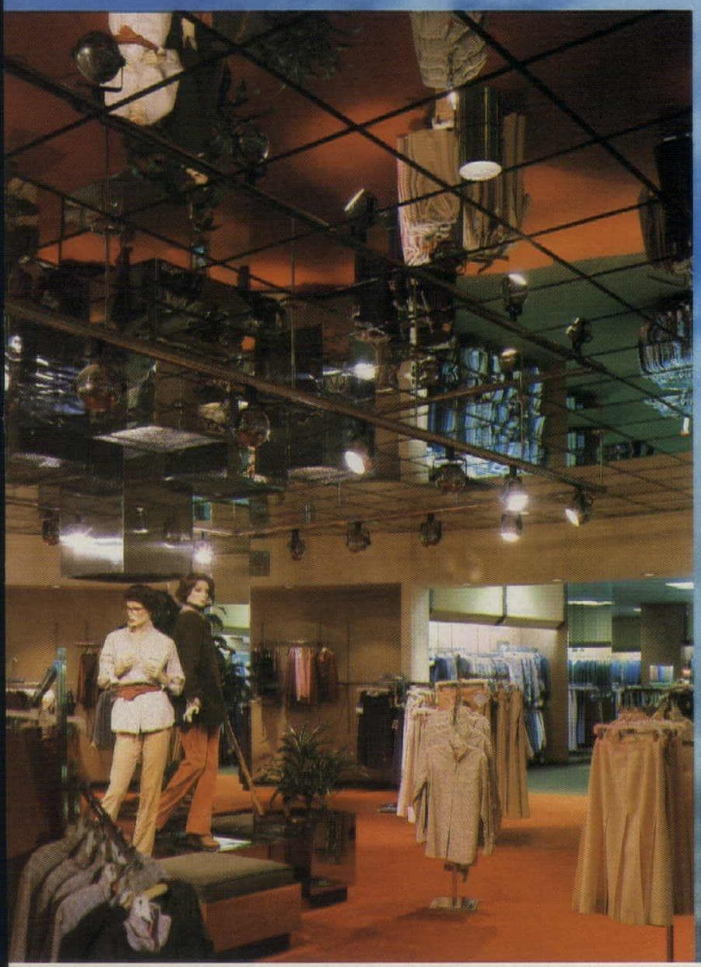

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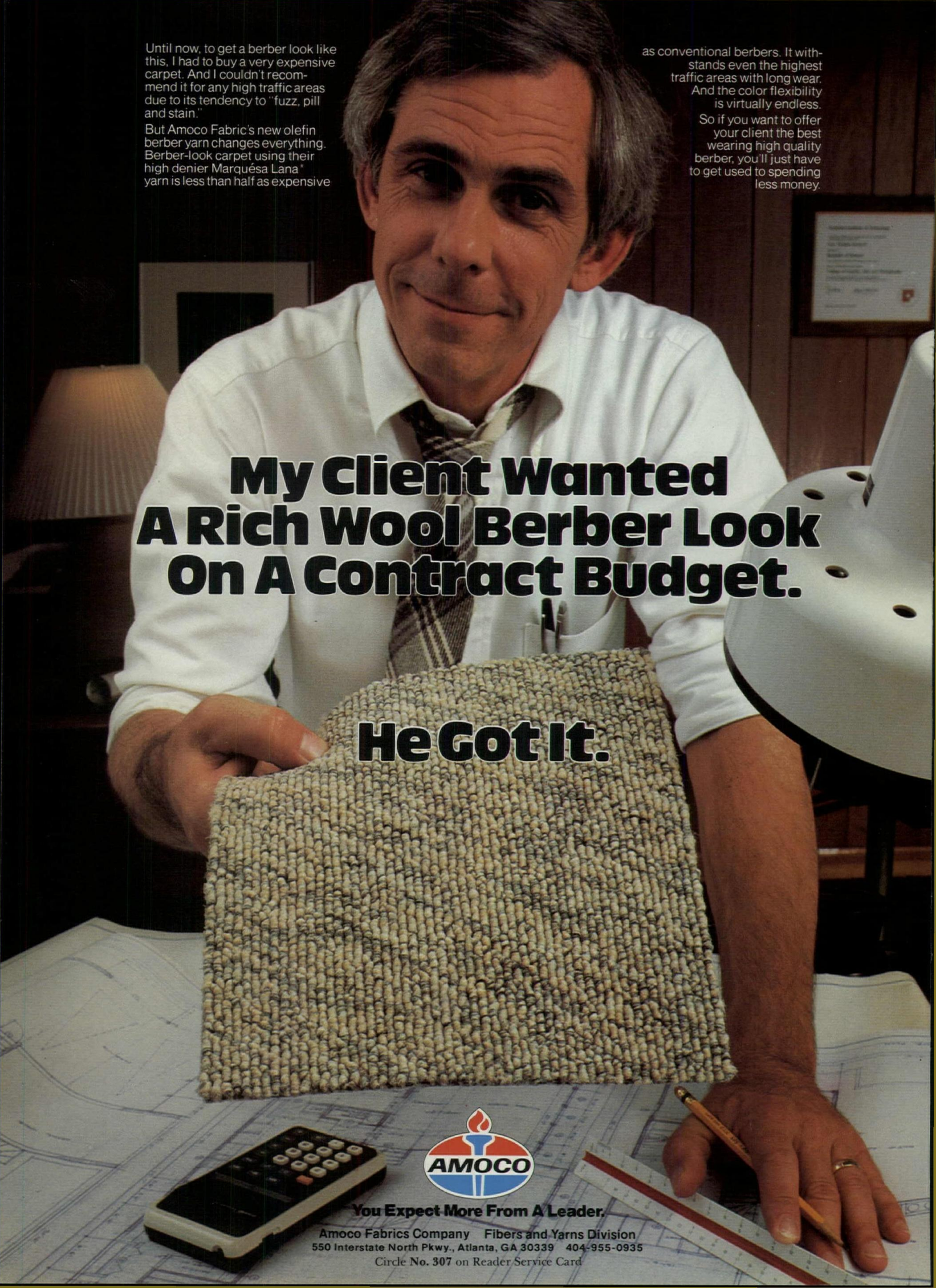
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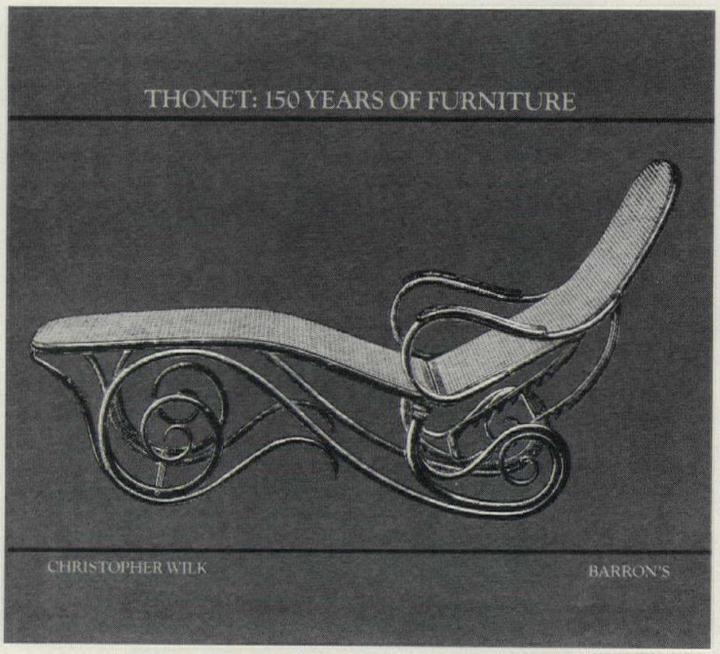
Furniture and decorative arts

Books



Thonet: 150 Years of Furniture *by Christopher Wilk. Woodbury, NY, Barron's, 1980. Illus., 143 pp., $18.95.*

The publication of this book marks the 150th anniversary of the company that revolutionized the design and production of modern furniture. In 1830, the German master-craftsman-designer Michael Thonet created the first bentwood chairs, thus beginning a production that continues today and is known throughout the world. In our own century, the company has produced steel and tubular steel furniture by Le Corbusier, André Lurcat, Mies van der Rohe, and Marcel Breuer. In the early 1920s and on through the war period when the factories and showrooms had to close, a single American factory in Long Island City, NY, had to carry much of the load. As author Wilk explains, "It was an assembly plant for bentwood furniture which arrived unassembled from Europe; it served as a factory for chairs, tables and other designs sold only in the U.S." This book is the first history in English of the world's largest furniture maker. It is heavily illustrated and includes rare 19th-Century photos from the Thonet catalog and museum collections.

[*Books continued on page 129*]

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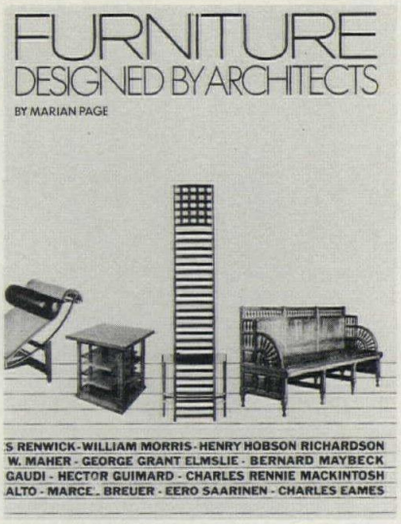
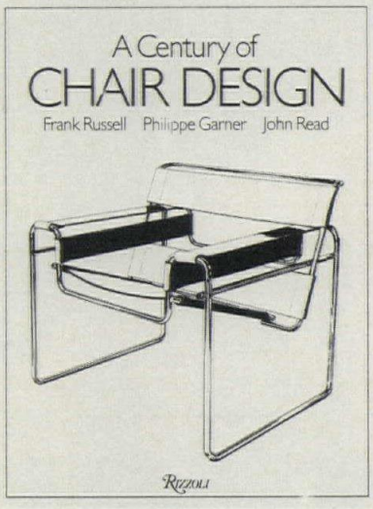
Books continued from page 127



Furniture Designed by Architects *by Marian Page. New York, Whitney Library of Design, 1980. Illus., 224 pp., $25.*

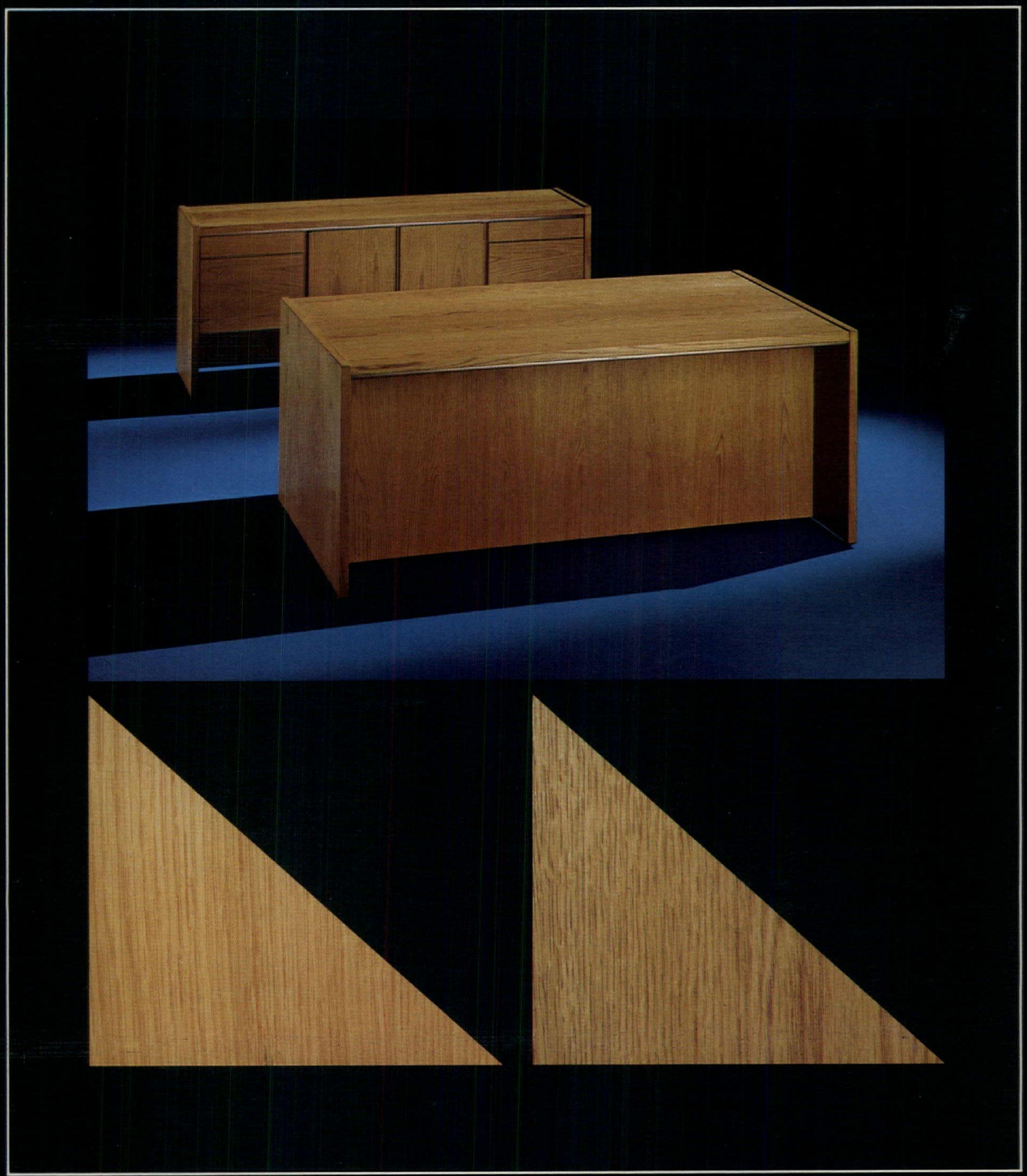
At least as far back as the 18th Century, when William Kent and Robert Adam designed furniture to function as an integral part of their interiors, noted architects have engaged in this activity to enhance their buildings. Some have been motivated by their definition of architecture as encompassing every detail of a building, while others have wanted to influence the lives of those who live and work in their buildings. Throughout this book, the author explores the architects' reasons for their designs and how they related to their time, place, and contemporaries. Organized in eight chapters, the book spans two centuries in covering the work of those architects who also became noted for their furniture and furnishings.



A Century of Chair Design *by Frank Russell, Philippe Garner, and John Read. New York, Rizzoli International Publications, Inc., 1981. Illus., 160 pp., $37.50.*

This international survey traces the development of chair design during the period 1850 to 1950 as seen in the work of over 60 craftsmen, designers, and architects. It includes the work of Alvar Aalto, the Bauhaus, Marcel Breuer, Carlo Bugatti, Le Corbusier, Charles Eames, Eileen Gray, Hector Guimard, Josef Hoffmann, Charles Rennie Mackintosh, Mies van der Rohe, Morris and Co., Pel, Gerrit Thomas Rietveld, Emile-Jacques Ruhlmann, Mart Stam, Thonet, and Frank Lloyd Wright, among others. A discussion of the work of each designer or firm is complemented by biographical information and illustrated with line drawings and photographs, both contemporary and specially commissioned.

[*Books continued on page 133*]



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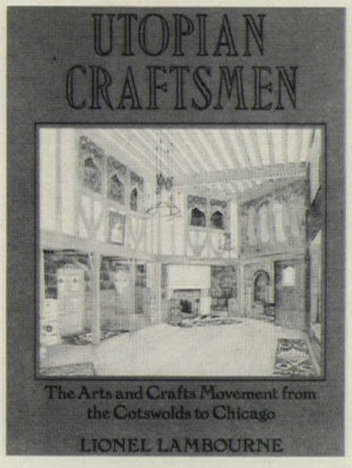
Books continued from page 129



Utopian Craftsmen: The Arts and Crafts Movement from the Cotswolds to Chicago *by Lionel Lambourne. Salt Lake City, Peregrine Smith, Inc., 1980. Illus., 218 pp., $27.95.*

The author, who is assistant keeper in the department of painting at the Victoria and Albert Museum, describes the ideals of a generation of dreamers who forsook the gloomy industrial cities of the 19th Century for the quiet dignity of the country, where they reestablished themselves as craftsmen and artists. This book traces the history of the Arts and Crafts movement from its beginnings in England, with such theorists as Ruskin and Morris, through its spread to America and those who dispersed the craftsman ideal here. The volume is lavishly illustrated with many fresh and new examples from the period, including painting, architecture, calligraphy, wallpaper, furniture, and other household objects that were to set the standards for design in the 20th Century.

Chicago Ceramics & Glass: An Illustrated History from 1871 to 1933 *by Sharon S. Darling. Chicago, the Chicago Historical Society, distributed by University of Chicago Press, 1980. Illus., 221 pp., $25.*

In this book, the curator of decorative arts at the Chicago Historical Society traces the period when Chicago's decorative arts reflected the influence of the British Arts and Crafts movement. Between 1871, when the Great Fire destroyed the city's business district, and 1933, when the Century of Progress Exposition was held, Chicago's artists, craftsmen, and architects were responsible for some remarkable innovations not only in architecture, but also in the decorative arts. Some, such as Louis Sullivan or Frank Lloyd Wright, have become legends; others, however, are known only to a few specialists or are forgotten altogether. This book focuses on two groups of art products and on those who designed them. The Decorative Arts section discusses small-scaled objects such as handpainted china, art pottery, and cut and engraved glass. The Architectural Arts section deals with the products that were closely tied to architectural trends, such as stained and ornamental glass and architectural terra cotta. A number of causes led to the decline and final demise of the Arts and Crafts movement, but Chicago is perhaps unique in being left with such a rich heritage of handcrafted objects, which are so well documented in this volume.

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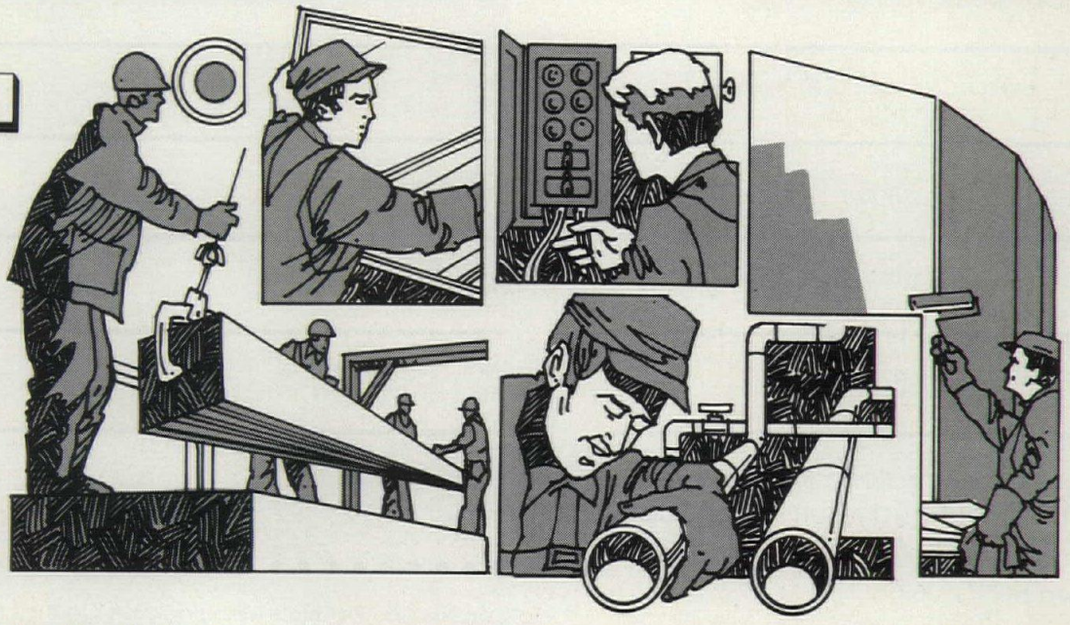

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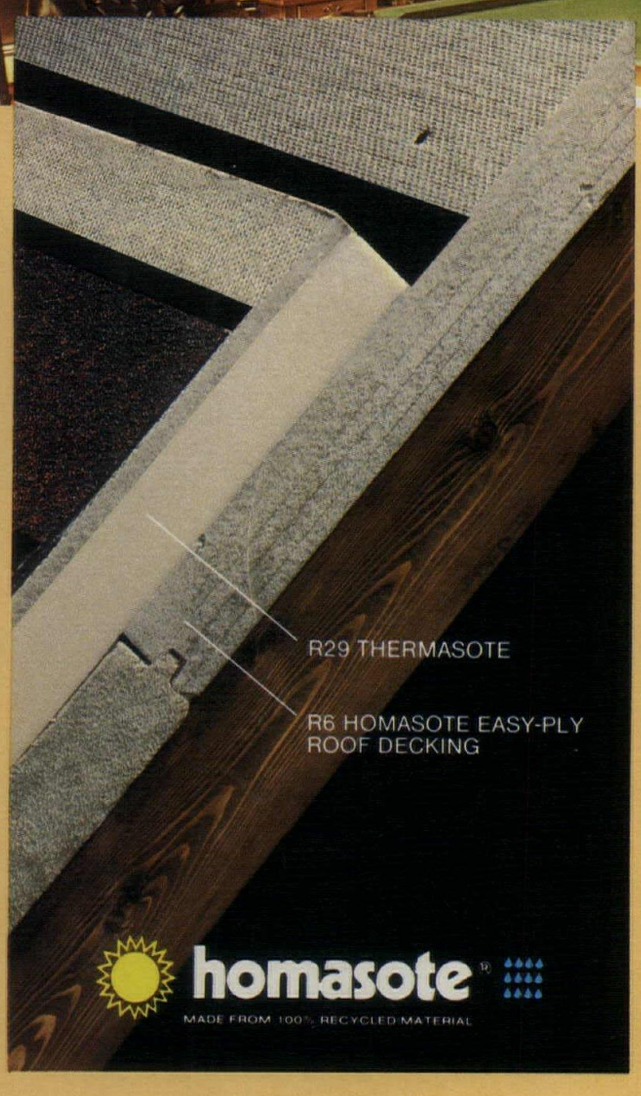

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Products and literature

The following items are related to the technics article about moistureproofing. They are grouped here for the convenience of the reader.

Moistureproofing Products

Silglaze™ 2400 silicone sealant will adhere to a wide variety of construction materials. It can be used in glazing, curtain-wall sealing, and butt glazing, and can be factory or field applied. According to the manufacturer, it retains its original properties after many years of exposure to weathering cycles. The sealant comes in four standard colors: clear, black, aluminum/gray, and bronze. General Electric Co., Silicone Products Dept.
Circle 129 on reader service card

Silicone building sealant 795 is a one-part silicone rubber product that cures at room temperature upon exposure to air. It is easily extruded at any temperature and produces a durable, flexible seal. It bonds to most construction materials without the use of a primer. The manufacturer says that it is unaffected by sunlight, snow, rain, or ozone and stays elastomeric at temperatures from −65 F to 300 F without hardening or becoming brittle. It is used for weatherproofing building joints, for glazing glass, metals, and plastics, and for perimeter sealing. Dow Corning Corp.
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Evazote 50 waterstop and joint seal combines foamed, closed-cell ethylene vinyl acetate and an epoxy bonding agent. For use in construction, it is said to retain its waterproofing integrity under strain of lateral, vertical, and diagonal movement of the joint. The product withstands extremes of temperature and bonds to concrete, brick, metals, marble, plastic, and glass. It is available in a number of colors. E-Poxy Industries, Inc.
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Moistureproofing Literature

Silpruf™ joint sealant Spec-Data sheet describes the silicone sealant and discusses and illustrates its use in various types of construction joints. Tables supply data on typical properties and adhesion characteristics. Information is also included on preparatory work and methods of application. General Electric Co., Silicone Products Div.
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Architectural Guidelines for Total Waterproofing Systems describes several products for use in exterior and interior waterproofing applications, such as slab construction and foundation walls. Products include one- and two-part polyurethane formulations and one-part hot-applied or cold-applied rubberized asphalt. Drawings show how the materials are applied in treating cracks, metal penetrations, drains, expansion joints, and decks. Tremco.
Circle 201 on reader service card

Guide for Sealed Joint Design, by K.K. Karpati, discusses the principles of joint design in the order in which they are encountered. It covers the properties to consider in the selection of sealants to accommodate joint movement, resist weathering, and retain waterproofing characteristics. Copies are 50¢ each, prepaid (no stamps), with checks payable to the Receiver General of Canada.

Literature continued from page 139

cusses installation procedures and product limitations. Sonneborn Building Products, Div. of Contech, Inc.
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Other products

Pull-up chair #6632 from the 4/6 group, for office, lounge, or conference room, has a curved hardwood frame with open arms and an upholstered back and seat. It comes in a choice of five wood finishes and a variety of upholstery fabrics and leathers. Carolina Seating Co.
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The 3600 line of steel office desks is offered in a selection of colors including four new pastels. The group includes a large executive desk, general office desk with double pedestal, secretarial desk with a typing return, and a small, single-pedestal model. There is also a matching credenza. Storwall International Inc.
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Two modular tables include a drawing table and a light table. The drawing table has a heavy-duty plastic laminate surface on a top that is adjustable to a convenient angle. The light table, with adjustable top, has an evenly diffused lighting source. Units, which are shipped knocked down, can be assembled easily. Foster Manufacturing Co.
Circle 134 on reader service card

Reflections lighting, for use with 400-watt high-pressure sodium or 250-watt metal halide lamps, can be mounted on walls or columns or suspended on hangers. The unit has a mirror-finish aluminum reflector and is designed to provide glare-free, shadow-free lighting at the work surface. According to the manufacturer, adequate lighting can be achieved with fewer fixtures, reducing maintenance costs and decreasing the air-conditioning load. Guth Lighting.
Circle 135 on reader service card

Spiral or straight stairs of all-metal construction for commercial or industrial applications are made to opening and ceiling height specifications. The metal treads can be carpeted easily. Ornamental inserts are available to fill in between balusters. Spirals can be clockwise or counterclockwise. Toce Brothers Manufacturing Ltd.
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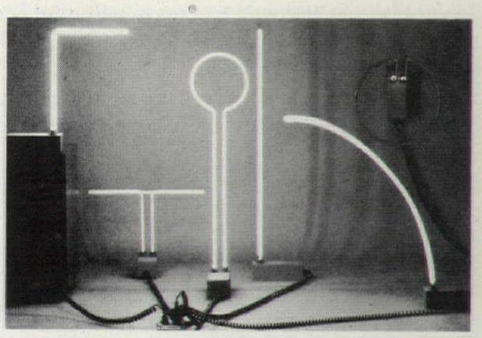

Neon lamp sculptures in contemporary designs for interior use require no installation or wiring. They plug into any outlet and take lower current than conventional lamps. Say It In Neon, Inc.
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Aquatrol™ penetrating finish protects exterior wood shingles, shakes, and siding against moisture absorption. The low-odor, low-solvent finish does not crack, peel, or allow deterioration of wood subsurfaces from the effects of sun or rain. It reacts with sunlight to restore woodtone color to wood that has weathered to a light gray. The Flood Co.
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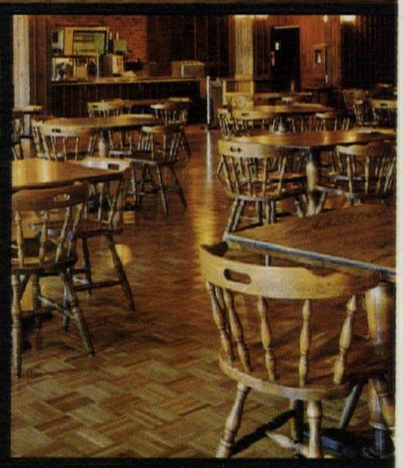
[Products continued on page 144]



Top: Pearl Ridge Center, Honolulu, HI
Middle left: Tower National Bank, Lima, OH
Middle right: Foothill Junior College, Los Altos, CA
Bottom: Penn Mutual Life Insurance Building, Philadelphia, PA

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Products continued from page 141

Thermacore industrial or commercial doors have outer sheets of Bethlehem Steel's Galvalume with a polyurethane core. The foam is inserted between the steel sheets while they are hot and expands to fill the cavity, bonding to the hot metal. Separation of the two metal surfaces with insulation provides a thermal break. EPDM rubber seals the door at the top, sides, floor, and between sections. Insoport Industries, Inc.
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LetterSpec™ is a system of programmed signs that are predesigned to accommodate direction, identification, information, and regulation messages. Standard signs are brown-bronze with white Helvetica medium type. They can be mounted on ceilings, walls, or doors. Four of the thirteen types have changeable magnetic inserts; five have the option of raised letters and braille. The system is recommended for use in hospitals to provide uniform signage at a reasonable cost. Jack Weiss Associates.
Circle 140 on reader service card

Building materials

Major materials suppliers for buildings that are featured this month, as they were furnished to P/A by the architects.

Best Products Corporate Headquarters, Richmond, Va (p. 66). *Architects: Hardy Holzman Pfeiffer Associates, New York.* Structural steel studs: United States Steel. Concrete: Lone Star Cement. Gypsum board: U.S. Gypsum Co. Windows: PPG Industries. Skylights: Wasco Skylights. Doors: International Door Co., Allied Bronze, Williamsburg Door Co. Ceiling surfacing: U.S. Gypsum Co. Roofing: Torcal/Dynamit-Nobel Co. Insulation: Owens-Corning Fiberglas. Movable partitions: Owens-Corning Fiberglas. Paint and stain: Glidden Paint Co. Hardware: Hager Hinge Co., Russwin Hardware, LCN. Kitchen equipment: Gaylord, Guardian, Hobart. Elevators: Dover Elevator. Lighting: Central City Electric Co., Edison Price Co. Plumbing and sanitary: American-Standard. Water fountains: Halsey Taylor. Sprinklers: Viking Co. Heating/air conditioning: McQuay Manufacturing Co. Carpeting: Mohawk Carpet. Lamps: Kenroy Lighting Co., Nessen Lamps. Open office/work stations: Xception. Desks: Hardwood House. Files: All-Steel. Cabinets: Karn Millwork, Lamica. Acoustical panels: Owens-Corning Fiberglas. Tables: ICF, John Harra Woodworking Studio, L&B Products, Berco Industries. Seating: Vecta Contract, Brayton International, B&B America, David Edwards, Knoll International. Chairs: David Edwards, Hardwood House, Stow-Davis, Thonet Industries, Hank Lowenstein, Jasper Seating Co.

Dance Studio and Music Performance Hall, St. Paul's School, Concord, NH (p. 74). *Architects: Hardy Holzman Pfeiffer Associates, New York.* Windows: Pella Wood Thermopane. Skylight frames: Kawneer Corp. Hollow metal doors: Kawneer. Lamps: Nessen Lamps. Tables: ICF. Seating: David Edwards and Bright Chair Co. Stacking chairs (library): ICF. Armchair (library): Brickel Associates. Musician chairs: Shilling. Office desks: Knoll International. Sofa upholstery material: Brickel Associates. Armchair upholstery: Boris Kroll. Desk seating upholstery material: Knoll.

Larry Gagosian Gallery, Venice, Ca (p. 86). *Architects: Studio Works, Los Angeles.* Ceramic tile: American-Olean. Stucco: Dexotex. Lighting: Halo. Door hardware: Iron Monger.

Haig House, Toronto (p. 90). *Architects: George Baird, Toronto.* Structural steel: Algoma Steel. Steel pan: Westeel Rosco. Aluminum siding: Alcan Canada. Window casement: Emery Glass. Overhead door: Overhead Door. Track lights: Lightolier.

Hendley Building, Galveston, Tx (p. 94). *Architect: Taft Architects, Houston.* Gypsum board: U.S. Gypsum. Paint: James Brite, Pittsburgh Paint. Hardware: Schlage. Lighting: Prescolite (downlights); Devine (exterior). Tile: Gladding McBern. Plumbing: Crane. Handrails: San Antonio Metal Works.

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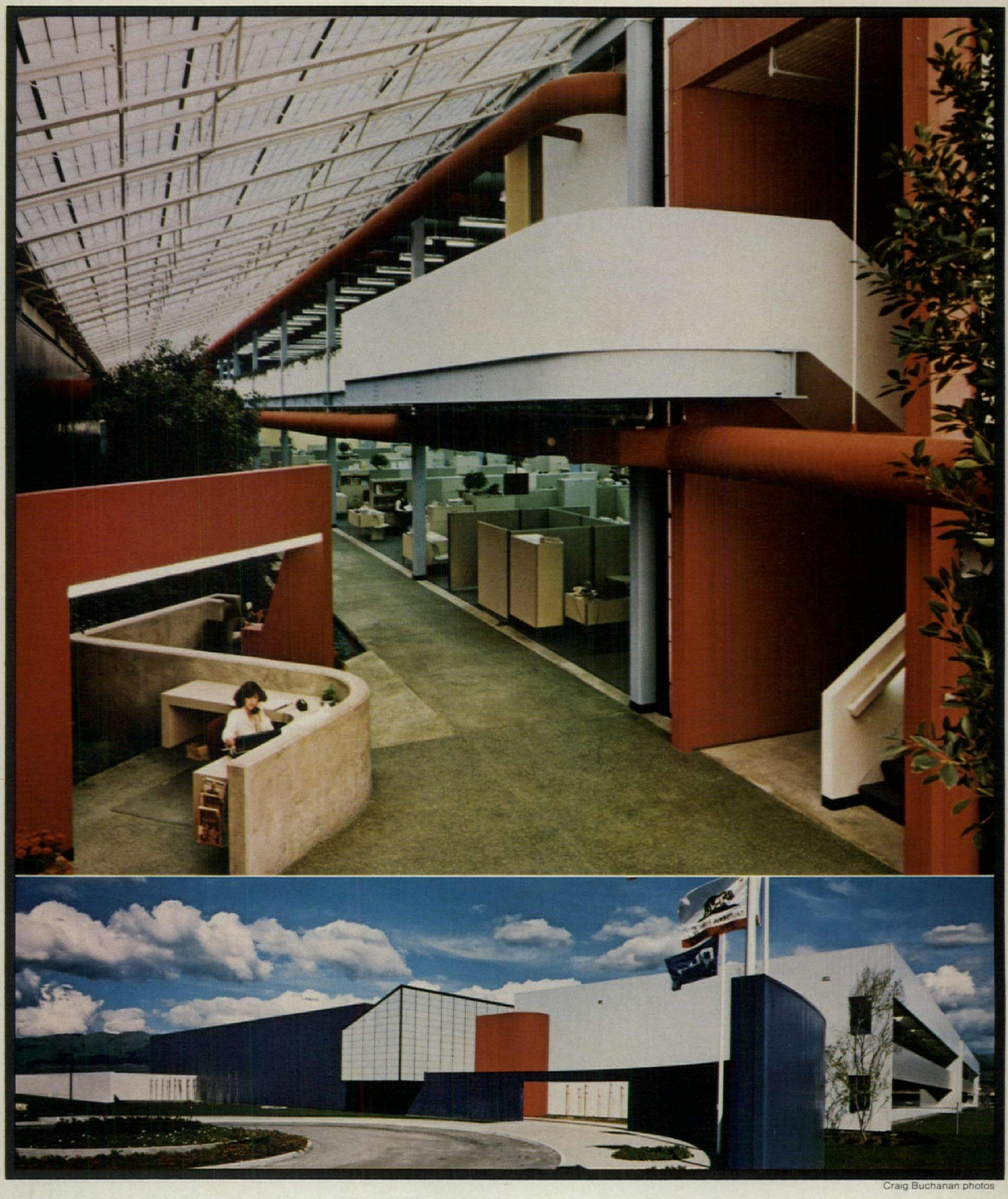
Qume Corporation Facilities, San Jose, CA *Architect:* Hawley & Peterson, Palo Alto, CA *Owner:* Qume Corporation, San Jose, CA



Craig Buchanan photos

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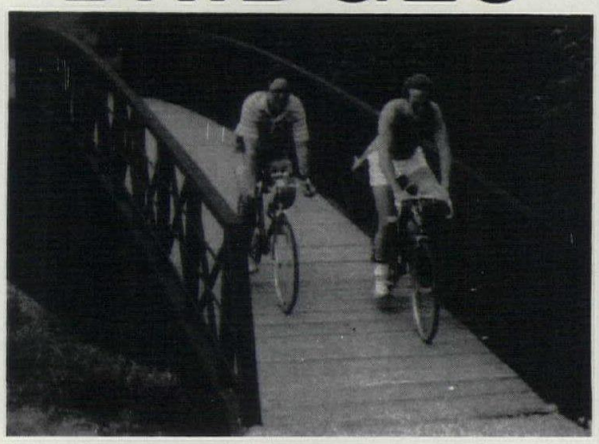

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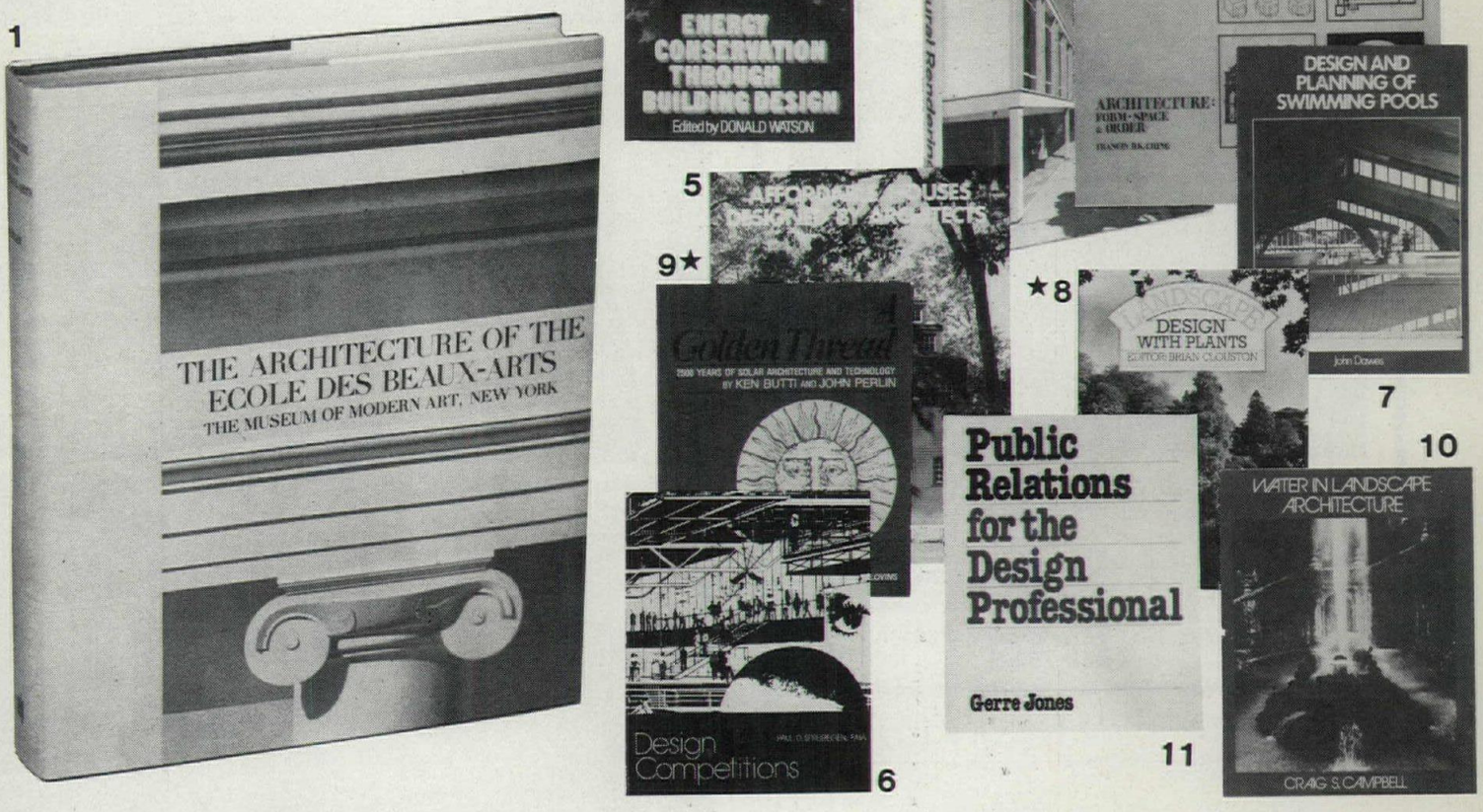

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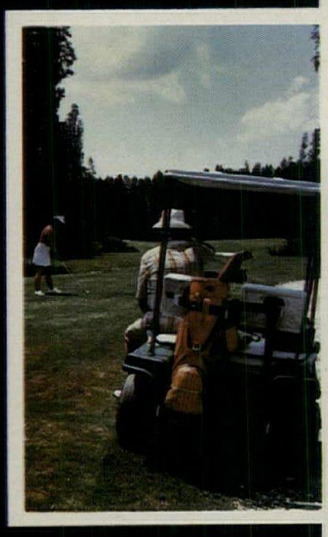

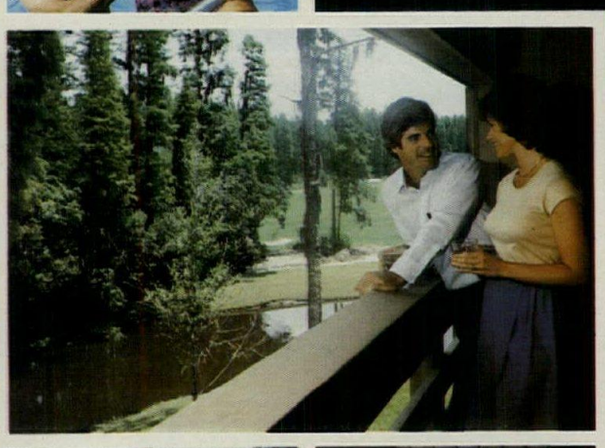

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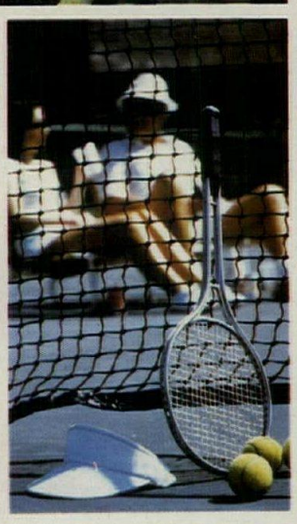

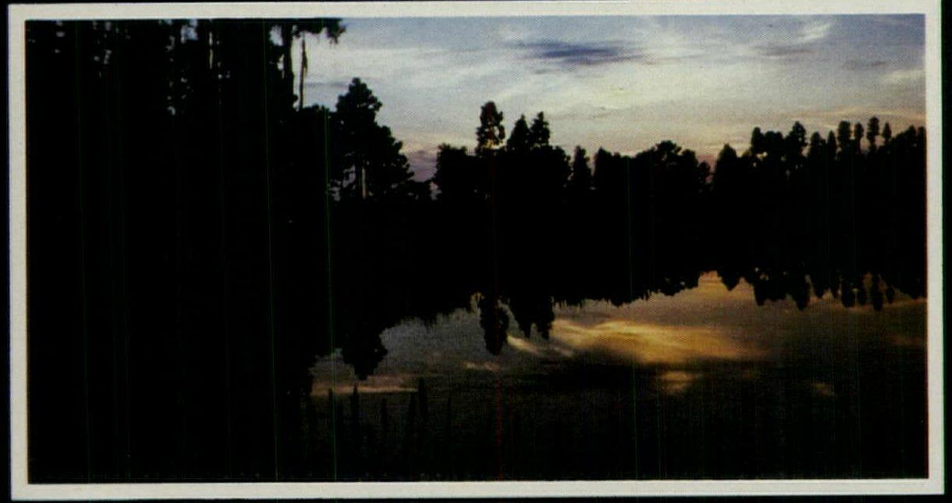

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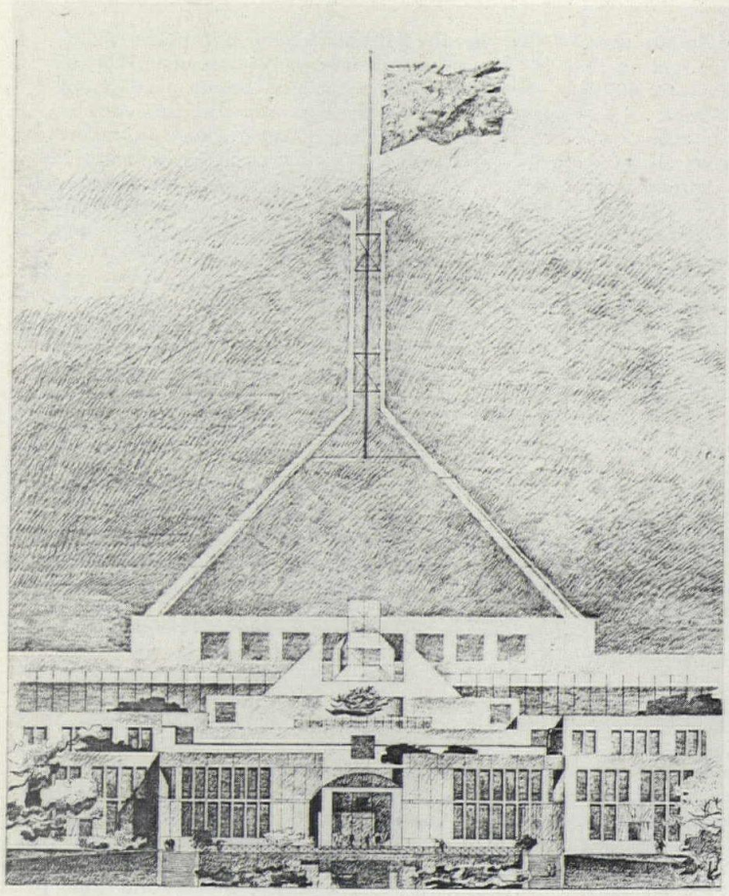

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